

Fiscal Year 1989



Annual Report to the Congress

Frank C. Carlucci
Secretary of Defense

**Report of the Secretary of Defense
Frank C. Carlucci
to the Congress**

on the

Amended FY 1988 / FY 1989 Biennial Budget

February 18, 1988

**This Report Reflects the
Amended FY 1988/FY 1989 Biennial Budget
as of February 11, 1988**

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TO THE CONGRESS OF THE UNITED STATES

With the delivery of this document, I place before the Congress the President's plan for securing the defense of America's principles and interests.

The Fiscal Year (FY) 1989 amended budget is the tenth and final defense budget in what has been a momentous decade. As the 1980s opened, our nation's armed forces were suffering from severe neglect. Recognizing the deteriorating state of our defenses, the President and the Congress together enacted a major rebuilding program to restore American strength. That effort has had a clear effect. Our nation will enter the 1990s far stronger than it did the present decade.

While our forces are now stronger, we continue to face a host of threats. Foremost among them is Soviet military power, the single most significant factor we consider in determining the forces required to guarantee our national security. Neither glasnost nor the stirrings of economic reform within the Soviet Union have resulted in any redirection of resources away from the Soviet military machine. Deterring Soviet or Soviet-inspired aggression will remain the prime aim of our national security strategy, and the benchmark against which we must measure our strength.

Our struggle to safeguard our security is made even more difficult by the current fiscal climate. The FY 1989 amended budget is \$33 billion less than our proposed spending level sent to the Congress only last year. In order to make such significant reductions, entire programs have been eliminated and force levels reduced.

At the same time, there has been no parallel reduction in our nation's global responsibilities. On the contrary, there is reason to believe that as we enter the 1990s our responsibilities may well increase. Western Europe, the Middle East, the Pacific rim, Soviet adventurism in our own hemisphere, the need to assure uninterrupted transit through vital sea lanes -- the Persian Gulf is one case in point -- require constant attention if U.S. interests are to be safeguarded. Reducing the resources we require to meet our global responsibilities -- without any reduction in those responsibilities themselves -- increases the risks to our interests and those of our friends and allies.

President Reagan and I believe that this budget preserves the common defense, but we agree as well that it forces us to accept greater risks than we think wise. We have done our best to apportion reductions in ways that minimize those risks. We have refused to shortchange our munitions and training accounts. We will reduce the size of our forces, but the units we do field will have what they need to perform the tasks entrusted to them. We also have resisted the false economies offered by simply stretching out programs, which reduces costs now, but delivers less later, and at a higher cost per unit.

The plan outlined in the following pages meets the target for defense spending set by the President and Congress at their November 1987 Budget Summit. To meet that target, we have had to accept another real decline compared to the FY 1988 budget. The plan therefore represents a continuation of one of the least noticed facts about the defense budgets of the late 1980s: the real decline in defense funding. Indeed, the erosion of our defense effort in real terms is now entering its fourth year. Beginning in FY 1986, defense funding has decreased by nearly 11 percent in real terms. The FY 1989 amended budget continues that decline.

We can all recognize that defense spending may be affected by domestic considerations. But changing domestic considerations do not alter the external threats we face.

We must not return to cycles of feast and famine that have plagued long-range defense planning in the past. I urge the Congress to approve our FY 1989 request, and to work with us to set defense spending on a more stable and steady course in the years ahead. Our goal must be to establish the kind of predictable funding that allows the Department of Defense to formulate long-term plans that make the most efficient use of its resources.

No task is more vital than preserving the forces that safeguard America's peace and freedom. It is imperative that the Congress and the President work together toward that aim. I pledge my full cooperation in that effort.

A handwritten signature in dark ink, appearing to read "Ronald C. Carlson". The signature is fluid and cursive, with a large, stylized initial "R".

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Part I

Defense Policy

A. U.S. NATIONAL VALUES AND SECURITY INTERESTS

1. Preserving the Common Defense

This past year Americans celebrated 200 years of constitutional government and the many blessings it has secured. The world has changed a great deal since 1787, and the United States has become a world leader in ways hardly imaginable by our forefathers. America is no longer an island nation with the option of "splendid isolationism." To prosper, we have had to bridge our ocean moat. Our economic and political interests have become global. To defend our values and our interests we have formed alliances, and maintained forces overseas.

The Department of Defense (DoD) exists to fulfill the national government's first obligation: to secure the nation's survival and independence against hostile powers that threaten our way of life. Our mission is to preserve America's freedom and secure its vital interests, creating an environment that allows our nation to prosper.

This presentation of my first Annual Report to the Congress provides a vivid reminder of the critical responsibilities of a Secretary of Defense in preserving the common defense. Contained herein are my decisions -- drawing on the judgments of thousands of military and civilian professionals -- on the best defense plan to include in President Reagan's overall FY 1989 federal budget in order to safeguard America and its vital interests. The plan must sustain our deployed forces so they can deter aggression and, should deterrence fail, fight on short notice and defeat aggression. Resource constraints have forced us to accept increased risks to our security and a smaller force structure as we strive to preserve required levels of readiness and sustainability. We cannot afford to return to the "hollow" force structure of the late 1970s. The plan also must invest for the future. Modernizing our forces is a continuous challenge that cannot be postponed without incurring greater risks and higher costs later.

To stay within the President's fiscal guidance as negotiated with the Congress, we have had to cut \$32.5 billion from the already scaled-back FY 1989 request prepared just last year. Among the cutbacks we have had to make are:

- Deactivating two Air Force tactical fighter wings;
- Deactivating one Army brigade;
- Deactivating one Navy carrier air wing; and
- Cancelling our air-launched miniature vehicle anti-satellite (ASAT) program.

There is a more comprehensive indicator of the scrutiny our programs have been under the last several years. Since first proposed in our FY 1986 budget request, we have had to make program reductions amounting to \$429.6 billion from our FY 1986-90 five-year program. To achieve that, DoD's professionals have had to consider virtually every possible efficiency, postponement, and cancellation. This FY 1989 budget has received unprecedented scrutiny. Now it is ready for congressional review. I pledge my full cooperation for that effort.

2. The Defense Planning Process

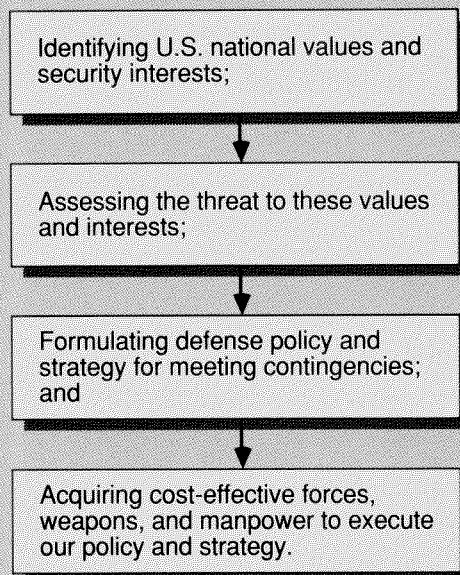
The formulation of each year's defense program follows the planning process depicted in Chart I.A.1.

U.S. national security interests are highlighted in this chapter, while specific and regional interests are detailed in Chapter I.D. Threats to U.S. interests are analyzed in Chapter I.B. Defense policies, which guide the development of defense strategy and military capabilities to counter threats to U.S. interests, are discussed in Chapter I.C along with our defense strategy, which specifies how we intend to employ our military capabilities and other means to preserve our security. Chapter I.E discusses our progress toward reaching effectively verifiable agreements on arms reductions. Finally, Chapter I.F outlines what we are doing to preserve the continuity of our defense planning process into the decade ahead.

As depicted in Chart I.A.1, our military force structure requirements are driven by the threats to our interests and the strategy we adopt to counter these threats. We design programs to research, develop, acquire, field, and maintain the appropriate forces to execute our defense strategy. These programs, in the aggregate, comprise our defense budget.

Chart I.A.1

The Defense Planning Process



From year to year, and from one Secretary of Defense to the next, there is -- fortunately -- a great deal of continuity in this planning process. As President Reagan noted in his 1988 report on U.S. National Security Strategy, U.S. interests and commitments tend to remain fairly stable, as they have for most of the post-war period. Specific features of the threats we face do change, but usually not in ways that affect our defense plans drastically in the short-term. Thus, our defense policy and military strategy have tended to evolve gradually. This overall continuity means that our force structure requirements tend to change slowly as well.

Continuity in defense planning is reflected in this Annual Report, which describes many policies and programs initiated and developed over many years -- some during my tenure as Deputy Secretary of Defense. With the submission of this report, I convey my endorsement of the policies and programs herein as constituting, in their entirety, the best achievable plan for fulfilling America's security requirements.

3. U.S. Interests, Commitments, and Instruments of National Power

U.S. national security interests are derived from broadly shared values (e.g., freedom, human rights, and economic prosperity) that serve to define specific interests and associated geographical concerns (e.g., the territorial integrity of our allies, unencumbered U.S. access to world markets and sources of strategic resources).

America's preeminent national security interest is the survival of the United States as a free and independent nation, with its fundamental values and institutions intact, and its people secure. We also seek to promote the growth of freedom, democratic institutions, and free market economies throughout the world, linked by fair and open international trade. More specifically, we support the security, stability and well-being of our allies and other nations friendly to our interests. We oppose the expansion of influence, control, or territory by nations hostile to freedom and to other fundamental values shared by America and its allies.

Other key American interests include:

- Unimpeded U.S. access to foreign markets and resources, and to the oceans and space; we also support the same free access for our allies.
- Consistent with other U.S. interests, reductions in the levels of armaments throughout the world.
- The peaceful and favorable resolution of disputes affecting U.S. and allied security.
- The open exchange of ideas and other measures to encourage understanding among the peoples of the world.

The protection of these interests has, over the years, led America to enter into commitments with other nations in the form of international treaties and agreements that secure and protect those interests. Alliances like the North Atlantic Treaty Organization (NATO) and bilateral agreements like those we have entered into with Japan, the Republic of Korea, the Philippines,

military power. Our economic power not only supports our military strength, but also provides a basis to secure our interests through other means. It is a major source of our leadership and influence among allied and friendly nations, by which we can promote the international economic stability that is conducive to military stability. Also, it provides resources to support U.S. foreign assistance and security assistance programs.

In an ideal world, the vigorous exercise of non-military instruments of national power would be the means of competition in the global arena. Regrettably, some nations still view the use of armed aggression as a legitimate means of advancing their ambitions. In contrast, our nation relies on military might for defensive purposes only. We see the exercise of military force as a last resort, not as a substitute for other instruments of national power. Moreover, the United States seeks to use all its non-military instruments of national power to reduce the threats driving our military requirements. To achieve adequate security, we would prefer to lower our military requirements rather than add to our military capabilities.

But our goal of reducing our defense effort while enhancing our security is, at best, an uncertain and long-term proposition. Paradoxically, history has shown us that the best chance we have to negotiate reductions in security threats is by showing our resolve to counter them, by force if necessary. A recent example of this paradox is the agreement to eliminate all U.S. and Soviet ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometers. The agreement was reached only after we began deploying intermediate-range nuclear forces (INF). By maintaining an adequate defense posture, we convey to our adversaries that they have nothing to gain by trying to achieve a military advantage over us. An adequate defense posture also preserves our security until the time when our non-military efforts can reduce the threats facing us.

The successful conduct of U.S. national security strategy involves the integration of all instruments of our national power. But it is our military strength alone that creates a secure environment allowing us to employ the other elements of our national power in attempting to preserve our security through peaceful means. Thus, our defense posture is designed to underwrite an international order in which peaceful commerce and diplomacy, not military force, guide the fate of nations.

Thailand, and Australia, serve to defend those common values that we share. By defending ourselves in this collective manner, we not only improve our own security, but we do so at a reduced cost; common security programs benefit all, and the defense burden is shared by all.

The defense program presented herein is designed to safeguard America's values, protect our vital interests, and fulfill our international commitments. Any reduction to this program must weigh any anticipated short-term savings with the increased long-term costs we are certain to incur, along with the increased risks to our interests and commitments.

America's defense policies are a component of our National Security Strategy, which is our overall plan for using all instruments of national power to ensure U.S. security. These instruments are interwoven with our military power and include:

- *Political Power:* America's influence with nations around the world has developed over many years. We have proven many times the non-threatening character of our aims. Of course, America's political power depends to a considerable extent on its military power, since the latter underwrites the stability that makes possible our exercise of peaceful, political influence. Moreover, our military strength provides a counterweight to the threats of our adversaries that might otherwise intimidate other nations into rejecting our peaceful political initiatives. In regions where conflict threatens U.S. interests, our diplomatic efforts -- drawing on all elements of national power -- can be essential to restoring stability and fostering outcomes favorable to us and to our allies and friends. In these instances, America's military posture can and does provide significant support for these efforts. For example, in the Persian Gulf our willingness to employ military power to protect our interests increases our influence with nations in that region. A strong U.S. military posture, backed by domestic political support and resolve to protect our interests, conveys the firmness of our commitments to allies and friends, thereby enhancing deterrence and increasing the incentives for adversaries to negotiate seriously toward outcomes favorable to us.

- *Economic Power:* America's economic strength is an enormously important instrument of our national power. Our economy provides the wherewithal for producing and maintaining our military power. In times of crisis or conflict, the economic strength of our industrial base can be mobilized as necessary to expand and sustain our

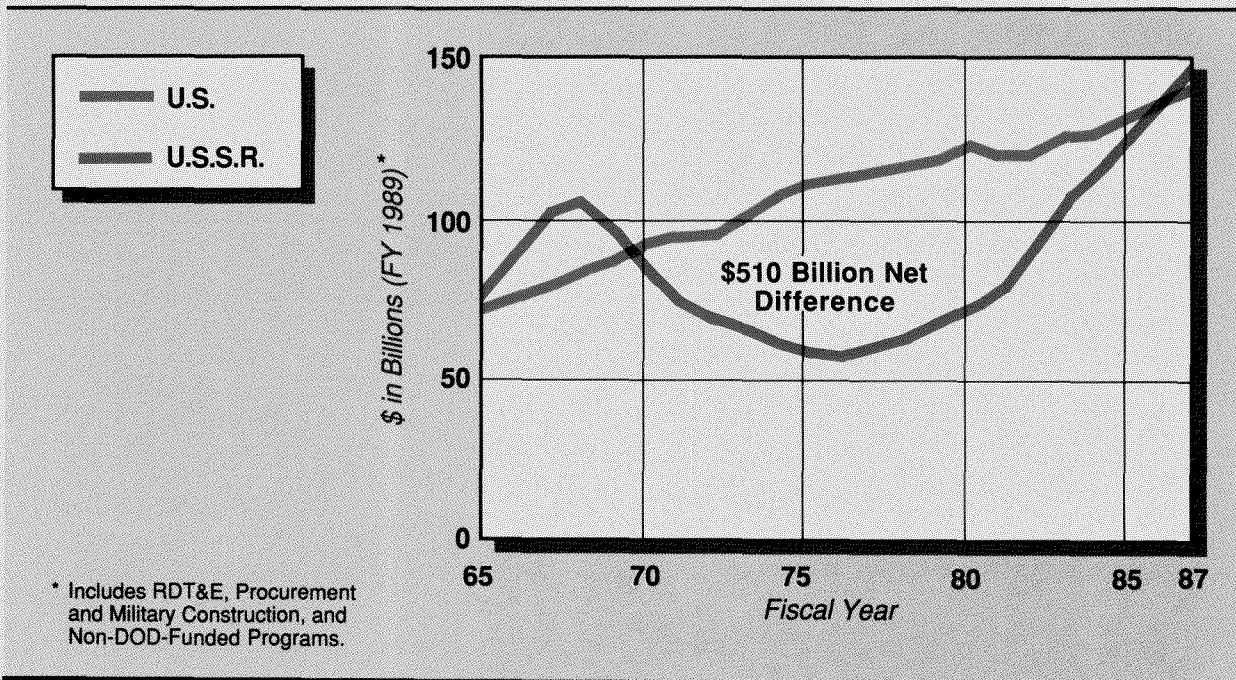
4. Defense Spending: Risk and Affordability

The defense planning process depicted in Chart I.A.1 helps us determine what military capabilities are needed to protect U.S. interests. But it cannot tell us precisely how much is enough to be safe. Defense planning is not a precise calculus, and a nation can never be perfectly safe. In any case, the high cost of military forces, combined with our limited resources, usually means that we must accept some degree of risk -- the gap between our defense capabilities and our best estimate of defense requirements. Our goal is to keep that risk at a prudent level.

The appropriate level of security risk for a nation must be decided with great care. While we would like to reduce the risks to our security interests to an absolute minimum, we must also recognize that we have entered a period of constrained resources that will see our military force structure shrink and our overall defense capabilities reduced. The result will be significantly greater risks to our ability to achieve our strategic goals. Thus we face difficult choices regarding our defenses. How well we make those choices and how well we manage their implementation will determine, to a great extent, whether or not we will preserve the gains of the past seven years and build upon them to provide for a more secure America.

Chart I.A.2

A Comparison of U.S. Defense Investment Expenditures With the Estimated Dollar Cost of Soviet Investment Expenditures



Economic considerations do have a significant bearing on the resources we devote to defense. Yet we must also remember that the defense efforts of our principal adversary, the Soviet Union, greatly affect the level of resources we require to maintain the degree of risk to our security at a prudent level. Chart I.A.2 highlights the disparity in defense investments between the United States and the Soviet Union by comparing U.S. and estimated Soviet costs over the past 20 years for military investment programs -- the procurement, construction, and research and development activities that build a lasting stock of military assets. Although the United States has in recent years restored a level of investment approximating the Soviet level, the Soviet Union retains most of the equipment, facilities, and designs they acquired by their much greater cumulative investments since 1970.

The following chapter describes the consequences of this disparity between U.S. and Soviet defense investments, and highlights other threats as well. The remainder of this report details our strategy and our programs for countering these threats and maintaining America's security risks at the lowest possible levels. President Reagan's program is an affordable one that merits the Congress's full support. Indeed, shortchanging defense now only guarantees that badly needed improvements will cost more in the future.

B. THREATS, MILITARY BALANCES, AND NET ASSESSMENTS

Over the past year, we have seen an intensifying Soviet public relations campaign designed ostensibly to portray a new Soviet commitment to peace. Despite this "new look," Moscow is continuing its arms buildup and expanding its political and military influence wherever and whenever the opportunity presents itself. Consequently, the Soviet Union remains the major threat to the security of the United States, its allies, and its friends. In addition, other countries, such as Libya and Iran, with far less military power than the Soviet Union, have shown themselves willing to attack our citizens and our interests. We must contend with these threats as well.

This chapter compares military power in various functional and regional areas where we are threatened by the Soviets. These comparisons are termed military balances. They weigh not only the threats posed by Soviet military forces, but also U.S. capabilities to counter these threats. Such assessments assist us in identifying adverse trends and highlight areas where corrective action may be required.

1. Soviet Goals and Objectives

Soviet General Secretary Gorbachev recently has undertaken a wide range of new initiatives, both domestic and foreign. He is focusing on themes like "democratization" of the Communist Party and Soviet society, "perestroyka" (restructuring) of the economy, and "glasnost" (openness). While it is hard to find fault with the rhetoric, we would be far more reassured by supporting actions. It is likely that Gorbachev is genuinely unhappy with the performance of the Soviet economy. If, however, there is to be any reallocation of resources to rebuild and reinvigorate a faltering economy, it is likely that a major motivation is to ensure a reliable long-term capability to support a modern military force. Indeed, the Soviets have always maintained a long-term perspective. Even if Gorbachev were to make no new investments in weapons production capacity (a highly unlikely event), the huge investments already made strongly suggest that Soviet defense production at least through 1990 will not be reduced significantly.

In line with their new "peace offensive," the Soviets no longer speak openly of winning a nuclear war. Yet with a force structure emphasizing a time-sensitive, accurate, hard-target-kill

nuclear capability; continued large-scale commitment to hardened command, control, and communications (C³) facilities; continued allocation of major resources to civil defense; and continued upgrade of air and missile defense systems, the Soviet's defense planning strongly suggests that they continue to maintain a capability for warfighting at all levels of the conflict spectrum.

In summary, regardless of Gorbachev's stated intentions, Soviet military capability continues to grow, and U.S. policy decisions must be made in light of these growing capabilities. Intentions can change overnight, particularly in the Soviet Union where decisions are made by a small elite, elected by no one and responsible only to themselves. We must ensure that we continue fielding forces capable of deterring aggression at all levels. This effort requires a sustained long-term commitment on our part.

2. Other Threats to U.S. National Interests

Since the end of World War II, ambiguous aggression in the form of low-intensity conflict (LIC) has become an increasing threat to our interests, as well as those of our allies and friends. Although these insurgencies, counterinsurgencies, attempts at subversion, and acts of terrorism do not approach the magnitude of the Soviet threat, they represent the principal form of conflict in the world today, and will likely remain so in the foreseeable future.

The Soviets, their satellites and surrogates, and many Third World states hostile to our interests have seen the value of ambiguous aggression in destabilizing established governments and institutions. The threat we face from low-intensity conflict and our strategy for countering it are discussed in Chapter I.C., while our growing special operations forces (SOF) capability to deal with ambiguous aggression is covered in Chapter III.E.

3. Military Balance Assessment

Our assessment is that today's overall strategic balance is essentially stable. Soviet planners, armed with a preponderant advantage in heavy intercontinental ballistic missiles (ICBMs), must nonetheless weigh the enhanced capability of our strategic Triad of ICBMs, submarine-launched ballistic missiles (SLBMs), and strategic bombers, as each leg proceeds through a critical modernization program. In Western Europe, NATO general purpose forces are being modernized in order to meet the increased threat from a numerically superior Warsaw Pact possessing weapons systems whose quality approaches that of the best fielded by NATO. In the Middle East/Southwest Asia, the military balance favors the

Soviets, but the combination of our efforts and those of countries in the region create significant risks and uncertainties for Soviet planners. In East Asia, the balance again favors the Soviets, but our modernization programs, and the economic vigor of our allies and friends, indicate a more favorable long-term trend.

The maritime balance favors us, but we have a greater dependence on the sea than do the Soviets. The power-projection balance also favors us, but increasing Soviet capabilities and their use of surrogates make this balance unstable at best.

4. The Strategic Balance

The weapon counts and simple exchange models typically used in describing the strategic nuclear balance focus almost exclusively on offensive forces. This approach neglects such key factors as U.S./Soviet asymmetries in passive and active defenses that would have a major influence on offensive forces' ability to perform their missions. Quite often differences between U.S. and Soviet strategic doctrines are also overlooked. In formulating our own assessments of the balance, we must address these and other factors as well.

Our principal objective is to deter aggression against ourselves, our allies, and our friends. Our deterrent's effectiveness depends, in large measure, on how the Soviets assess the strategic balance, since it is the U.S.S.R. that we seek to deter from aggression. Recent Soviet declaratory statements appear to reject their previously held concepts of nuclear warfighting while disclaiming a preemptive nuclear strategy. We have not seen, however, corresponding changes in Soviet force posture or adjustments in some key modernization efforts that would support this aspect of Moscow's declaratory policy. Soviet leaders seem to believe that nuclear war would be highly destructive and militarily undesirable, and should therefore be avoided, if possible. Nevertheless, they also believe that nuclear war could occur and that the U.S.S.R. should be prepared for such a possibility. The Soviet leadership believes that it is feasible, through a variety of means, to make it more likely that the U.S.S.R. will emerge from a nuclear war in relatively better condition than its foes, and that the Soviet regime could retain its political control. This objective governs the long-standing Soviet commitment of scarce resources to enhance both their offensive and defensive strategic capabilities. It also helps to explain Soviet operational planning that is designed to seize the strategic initiative through prompt missile attacks, and to limit damage to the U.S.S.R. through a vast, interlocking system of active and passive defenses and related measures. Consequently, the key to deterring Soviet aggression remains our ability to hold at risk those assets that the Soviets value most.

a. Offensive Forces

U.S. offensive forces are becoming increasingly effective and survivable. The introduction of our Peacekeeper ICBM begins to redress the existing asymmetry in prompt, hard-target kill capability, although even the full 100 Peacekeeper force will not erase this Soviet advantage entirely. Our advantage in bombers will persist as we continue deploying the B-1B bomber and fitting selected B-52 platforms with air-launched cruise missiles (ALCMs).

In the longer term, our projected modernization efforts will reduce Soviet advantages in some areas and maintain some areas of U.S. advantage. Deployment of the rail-based Peacekeeper will result in a highly survivable land-based missile force. Introduction of the highly accurate Trident II SLBM aboard the more survivable Trident SSBN (Ballistic Missile Submarine, Nuclear-Powered), now steadily entering the fleet, will permit us to hold at risk a greater proportion of the hardened, fixed Soviet target base. The Advanced Technology Bomber (ATB) and the Advanced Cruise Missile (ACM) will greatly increase the penetration capability, operational flexibility, and effectiveness of our air-breathing forces. Furthermore, projected improvements to our command, control, and communications systems will enhance our capability to manage U.S. forces in demanding contingencies, and should, therefore, discourage a preemptive attack against our command system.

Soviet offensive force enhancement efforts center on increasing their forces' survivability, operational flexibility, and their advantage in prompt, hard-target-kill capability. They are deploying their road-mobile SS-25 ICBM and their rail-based SS-24 ICBM (which apparently will also be silo-based). This Soviet trend toward mobility, complemented by the strategic defensive developments noted below, may significantly alter the Soviet target base and complicate our ability to hold at risk significant Soviet military assets. The follow-on to the SS-18 ICBM -- the Soviet's prime counterforce weapon -- has begun flight testing, again underscoring the Soviet commitment to a preemptive strategy. Moscow's continued construction of its Typhoon and Delta IV submarines, armed with longer range SS-N-20 and SS-N-23 SLBMs respectively, will increase the force's survivability by permitting SSBN operations in waters protected by Soviet naval and air forces. We expect to see more accurate versions of these two SLBMs, providing the Soviet SSBN force with a greater capability to attack hardened U.S. targets.

Soviet modernization programs are quite comprehensive, and include the rejuvenation of their air-breathing forces in an attempt to erode our advantage in this area. Their new Bear-H bombers, equipped to carry the AS-15 long-range ALCM, have

conducted training patrols within operational range of North America. A second new AS-15-capable Soviet intercontinental bomber, the Blackjack, is completing its development and could become operational in 1988. In addition to the AS-15 and the SS-N-21 (a sea-launched cruise missile, or SLCM), the Soviets are developing a larger SLCM, the SS-NX-24, which has been flight-tested from a specially converted Yankee-class submarine, and a larger ALCM, the AS-X-19. Soviet modernization of their strategic forces also includes the deployment of their new Midas tanker aircraft. These activities underscore the Soviet commitment to enhancing their overall force flexibility and employment diversity, thereby complementing their advantage in ICBMs.

b. Defensive Measures

It is in strategic defense, however, that the asymmetry favoring the U.S.S.R. is particularly stark. Our air defenses, although being modernized by the introduction of new ground-based radars and the replacement of obsolete fighter aircraft, are not designed to provide the level of protection associated with their Soviet counterparts. Our Strategic Defense Initiative (SDI) research and experimentation program is designed to determine the feasibility of an effective defense against ballistic missiles. The initial results are very encouraging and promising concepts are being pursued. Over the long term, an effective defense against ballistic missiles could negate the defensive asymmetry now favoring the Soviets, discouraging any Soviet perception that those advantages could be converted to concrete gains. Currently, though, our absence of civil defenses, industrial preparedness measures, and related efforts underline the Soviet advantage in this aspect of the strategic balance.

The Soviets are continuing their enormous investment in expensive and technically demanding active and passive defense systems designed to limit damage to the U.S.S.R. in the event of nuclear war. Numerous deep-underground facilities exist, designed to withstand nuclear attack and provide protection to a significant proportion of the Soviet civilian and military leadership. These facilities are supported by a complex system of hardened, redundant, and mobile command, control, and communications systems designed to assure centralized control during and after a nuclear exchange. Although adding considerable costs both to the construction and operation of factories in an economy strapped for resources for civilian projects, industrial preparations for nuclear war continue. Civil defenses are steadily improving as well.

Soviet active defenses include the world's largest air-defense network, and the only operational ballistic missile defense and antisatellite (ASAT) systems in existence. The Soviet operational

ASAT contributes to their warfighting posture by keeping at risk U.S. satellites in low-earth orbit, a capability not possessed by the United States. Moscow's modernization of its antiballistic missile (ABM) system, and its interlocking network of new, large phased-array radars (including the one at Krasnoyarsk that violates the ABM Treaty), may provide the foundation for a potential nationwide ABM deployment. This development, particularly in the context of other Soviet ABM-related activities, is especially troublesome.

Looking toward the future, the Soviets are continuing their research and development (R&D) activities in many areas being examined by our Strategic Defense Initiative, but at a higher level of funding. In some cases Soviet activity has gone beyond laboratory research, as witnessed by their ground-based lasers at Sary Shagan, which are probably capable of damaging some components of U.S. satellites in orbit. Testing of components for a large-scale ground-based laser ABM system could occur in the early 1990s, with an operational ground-based system becoming available possibly in the late 1990s and its space-based counterpart reaching deployment after the year 2000. The Soviets are continuing research in particle beam, radio frequency, and kinetic energy weapons, and could deploy ASAT and ABM prototypes of these systems by the mid-to-late 1990s.

An overall assessment of the strategic balance indicates that the United States has, and will retain for the foreseeable future, the capability to deter a direct nuclear attack. This judgment assumes that President Reagan's strategic modernization program is fully implemented in a timely manner. Absent these U.S. improvements, the tempo and direction of Soviet programs will erode some remaining areas of U.S. advantage and extend Soviet advantages, particularly in the area of strategic defense.

Looking forward, the asymmetry in strategic defenses and the changing nature of the Soviet target base, partially reflected in the Soviet commitment to deep underground facilities and mobility, represent areas of considerable concern. Left unchallenged, these trends will, over time, remove from risk an increasing portion of those assets which the Soviets consider vital in retaining control over their society and achieving their wartime goals. Such developments would weaken our ability to deter. Our future ability to maintain an acceptable strategic balance depends on our developing both U.S. strategic offensive and defensive capabilities. Reducing the existing asymmetry in strategic defense capabilities, in particular, would demonstrate to the Soviet leadership that it does not possess usable military advantages, thereby reducing the risk of aggression.

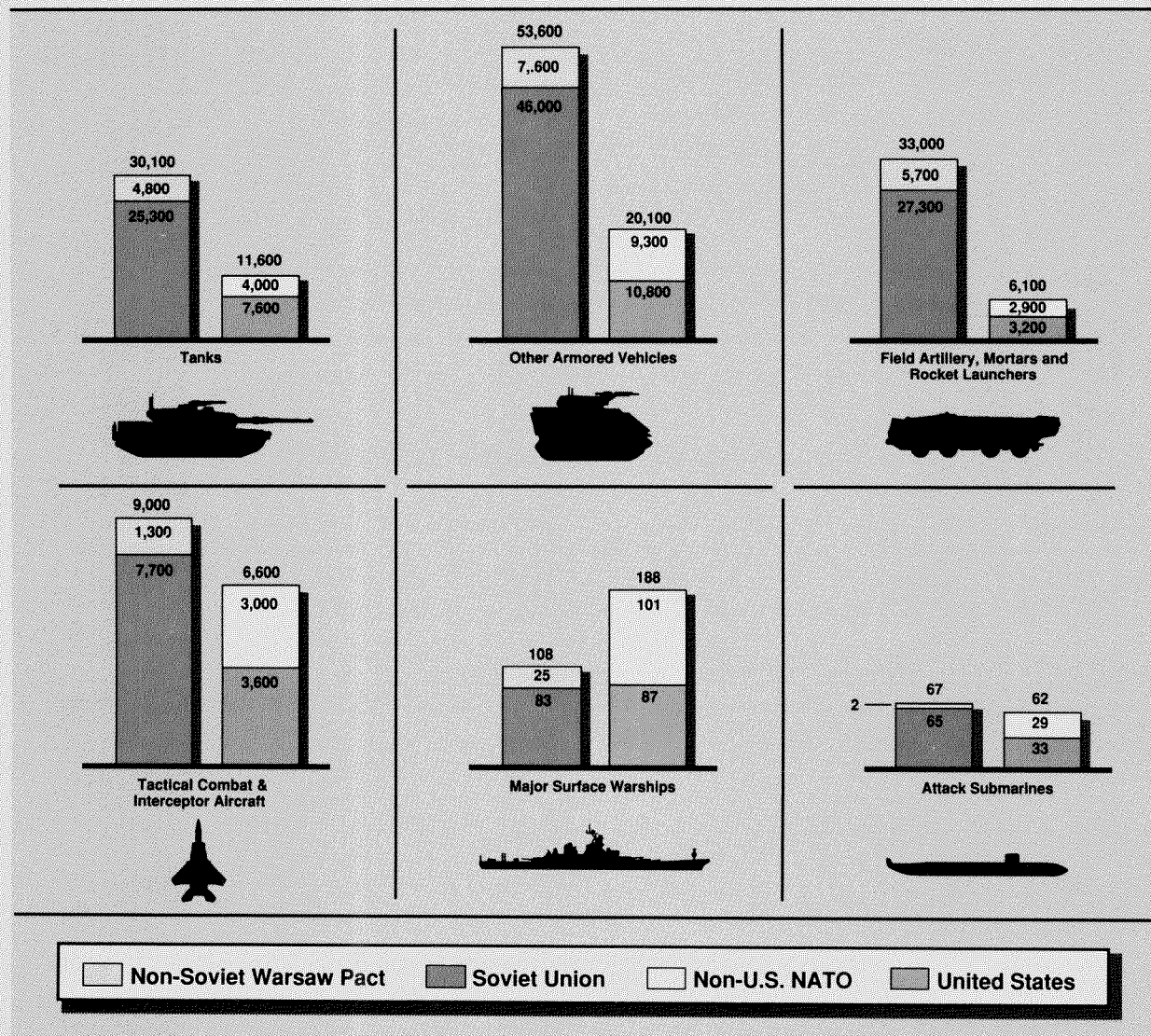
5. Major Regional Balances

a. The NATO - Warsaw Pact Balance

We remain concerned with the advantages the Warsaw Pact holds over NATO in most categories of forces. These advantages stem, in part, from the continuing pace of Pact weapons production that outstripped NATO's efforts over the past decade (see Chart I.B.1).

Chart I.B.1

Production of Selected Weapons for NATO and Warsaw Pact Forces (1978 - 1987)



Consequently, the Pact has been able to expand and modernize its forces, maintaining, and in some cases increasing, its advantages in nonstrategic nuclear forces (NSNF), chemical forces, and conventional ground and air forces. This situation is particularly worrisome since NATO's strategy of flexible response calls for a credible force capability across the spectrum of conflict.

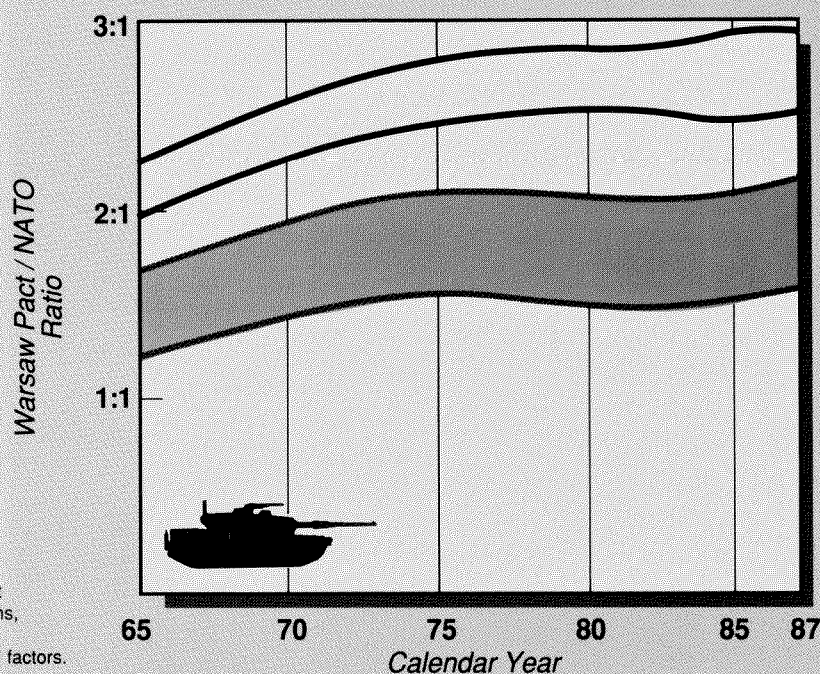
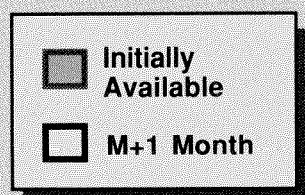
In the NSNF category, the Warsaw Pact has, and we project will continue to have, advantages in quantity, survivability, and flexibility. The Intermediate-Range Nuclear Forces (INF) Treaty eliminating longer and shorter range INF missiles will reduce some of those Pact advantages. Nonetheless, they currently hold more than a 3:1 advantage in dual-capable INF aircraft and are expected to maintain that advantage. In the category of short-range nuclear forces (SNF), the Soviets have a major advantage in terms of nuclear-capable surface-to-surface missiles and artillery, and that advantage could become even greater over the next ten years. Regarding missile launchers alone, the Soviets have a 17:1 advantage over NATO. That advantage would be further compounded by the large number of refire missiles they typically deploy for each launcher. Additionally, since much of the Pact's ground-based NSNF typically outranges NATO's, our nuclear forces must be deployed closer to the forward-line of troops (FLOT) and, therefore, could be more vulnerable to conventional and nuclear strikes during a war. We are actively involved with our NATO allies in identifying steps that we can take to address these and other problems in order to maintain an effective nuclear deterrent force.

The Warsaw Pact also currently holds a decided advantage over NATO in chemical offensive and defensive capabilities. A wide variety of the Pact's conventional weapons systems are capable of delivering chemical munitions. Moreover, the Soviets have more than 60,000 chemical warfare personnel and over 30,000 chemical, biological, radiological (CBR)-related vehicles deployed with chemical troops. In contrast, NATO primarily relies on a small and aging U.S. chemical stockpile as a deterrent. With the Congress's support, we have embarked on a long-overdue modernization effort in this area.

The Pact is retaining its advantage in conventional forces. Particularly worrisome is the growth in their ground force advantage. By one measure, which accounts for both quantity and quality of forces, the Pact's advantage in initially available pre-hostility ground force combat potential in their Western Theater of Military Operations (WTVD, in Soviet terms) increased significantly between 1965 and 1987. The Pact's advantage in this category after 30 days of mobilization on both sides historically

Chart I.B.2

**Ratio of Warsaw Pact to NATO Ground Forces
in the WTVD, 1965-1987: Pre-Hostility Combat Potential**



NOTE:
Range of possibility results from different assumptions concerning Soviet intentions, war planning, readiness, training cycles, mobilization capability, and other related factors.

has been even greater (see Chart I.B.2). Indeed, one bright spot in the ground force balance is that our modernization efforts and those of our allies have started to pay off. Our deployments of new attack helicopters, main battle tanks, infantry fighting vehicles, multiple rocket launchers, and other ground combat systems in adequate numbers have allowed us to keep pace with the Pact's modernization efforts. Mandated cuts in defense resources, however, threaten to erode these hard-won gains in our nonnuclear deterrent.

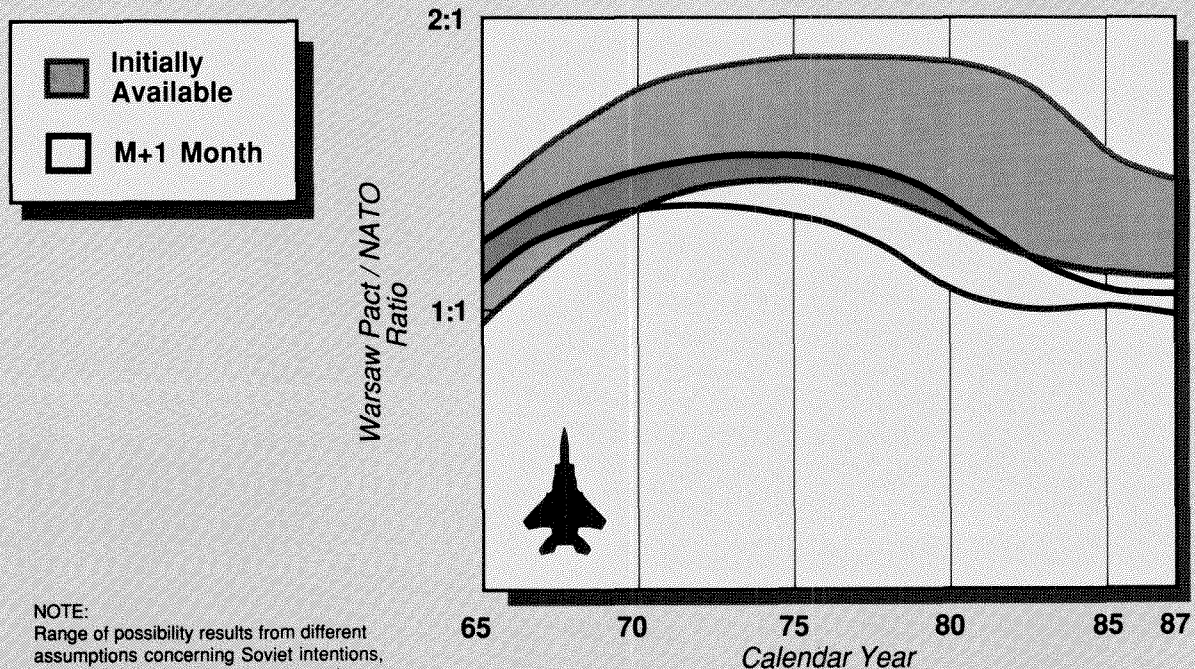
Just as important as the number and quality of ground forces deployed in Europe is the NATO and Warsaw Pact strategy and doctrine for employing them. Since NATO is a defensive alliance, the Pact can choose the time and location of any attack, while NATO will have to react to an unfolding situation. We expect that the Pact will not attack uniformly across the entire front. Rather, they will seek to mass their forces and firepower against selected NATO sectors, hoping to achieve quick penetrations that they can exploit rapidly. By combining this approach with attacks intended to fix NATO's strongest forces in place (preventing their withdrawal, repositioning, and use as counterattack forces), the Pact

hopes to achieve a quick conventional victory, possibly reaching its immediate theater objectives in as little as two weeks.

Simultaneously, the Pact expects to conduct theater-wide air operations to destroy NATO's nuclear forces and gain air superiority, although the Pact's advantage in the air is not as great as it is on the ground. Applying similar quality/quantity measures as used for ground forces to determine air force combat potential, one finds that the Pact has increased its in-place, pre-war fixed-wing air force advantage in the Western TVD significantly since 1965. Furthermore, our analyses show that after 30 days of mobilization on both sides, NATO has been able to improve this air balance (see Chart I.B.3). According to our projections, however, Soviet Air Force modernization coupled with growing resource

Chart I.B.3

**Ratio of Warsaw Pact to NATO Air Forces
in the WTVD, 1965-1987: Pre-Hostility Combat Potential**



NOTE:
Range of possibility results from different assumptions concerning Soviet intentions, war planning, readiness, training cycles, mobilization capability, and other related factors.

constraints on U.S. modernization will, by 1990, see the Pact erode the gains NATO has made, at great cost, since 1975.

Furthermore, the Pact's air operation involves much more than fixed-wing aircraft. They plan to employ conventionally armed surface-to-surface missiles, air-assault units, attack helicopters, special purpose forces (Spetsnaz), and radio-electronic combat systems as well. While we know that the Pact has substantial numbers of those types of forces, we have not yet been able to calculate adequately the effects of such a combined arms approach on air warfare.

Yet another important consideration in assessing the European balance is the ability of both sides to sustain their combat forces with ammunition, fuel, repair parts, etc. A number of indicators lead us to believe that the Pact has an advantage over NATO in this area as well. In terms of ammunition stockage, for example, the Pact has substantially increased its storage capacity in the Western TVD over the past ten years. NATO improvements in ammunition sustainability, however, have not been nearly as great, and in terms of days of combat, NATO falls far short of the Pact.

The above factors, among others, lead us to conclude that in the event of war in Europe, NATO could face the difficult choice of early escalation to the use of nuclear weapons or suffering a conventional defeat in Europe's critical Central Region. NATO's primary objective, however, is not to fight a war, but to deter war. Since deterrence rests in the eye of the beholder, the Soviet assessment is central to understanding the deterrent quality of our forces. For example, despite the Pact's advantages in nuclear and chemical weapons, the Soviets would prefer in any conflict with NATO to defeat the Alliance using only conventional forces. Their preference could well be due, in part, to the escalatory linkages that are associated with nuclear and chemical weapons and to a lack of Soviet confidence in their ability to control escalation should those weapons be used.

At the conventional level, the Soviets may not be confident that their forces are sufficient to guarantee them a high probability of success. Such a Soviet assessment may well be influenced by the unattractive prospect of mobilizing and deploying forward their reserve forces in the face of capabilities NATO is pursuing for Follow-On Forces Attack (FOFA). Furthermore, it is likely that the Soviets remain concerned about the military capability and reliability of their allies' forces. Consequently, we assess that the combination of Soviet uncertainty in the nuclear and conventional realm is currently enough to deter them from starting a war in Europe. But as we noted earlier, the Pact continues to hold an advantage in these force categories, and the trends in these categories are not comforting. We need to do more

in both areas if we are to maintain confidence in the deterrent capability of our forces.

In the mid term, increasing armaments cooperation among the NATO allies improves the efficiency of the Alliance's defense spending. We see this development as an extremely positive one and, with the help of the Congress, we are continuing to pursue these types of initiatives. In the long term, however, we must go beyond these efforts. Developing new conventional weapons technologies, such as lasers and directed-energy weapons, could well cause a fundamental change in the nature of warfare with tremendous implications for the kinds of forces and types of weapons we need to achieve our national security objectives. Given the underlying advantage the West has in science and technology, we should attempt to capitalize on our lead in a number of these technologies to improve significantly our military posture. This approach lies at the heart of our Competitive Strategy Initiative (see Chapter I.F), and we have a number of efforts under way to identify possible actions we can take. To the degree that we are successful in this effort, we should be able to improve considerably our ability to deter war in Europe and to defend Europe should deterrence fail.

b. The East Asia Balance

The Soviets continue to upgrade the equipment of their military forces in East Asia. Modernizing the more than 50 ground divisions deployed in the Far East is the centerpiece of Moscow's ground force activity. The Soviet's recent pull-back of one motorized rifle division from Mongolia constituted a gesture to China of Moscow's willingness to discuss bilateral and regional issues, but is not expected to presage a further drawdown of Soviet forces along the Chinese border. Air regiments in the region continue receiving new ground attack and air defense aircraft, as Backfire aircraft are replacing and augmenting older inventories of Badgers. The Soviets also have deployed modified Bear aircraft to support their Far East strategic and tactical operations. The Soviet Pacific Fleet is receiving new cruisers, destroyers, and submarines, thus maintaining its status as the largest of the four Soviet fleets. These Soviet conventional forces are still supplemented by a substantial number of short- and intermediate-range nuclear forces, including the land-mobile SS-20, although the latter is scheduled to be removed in accordance with the terms of the INF Treaty.

In responding to the imposing military power on its northern border, the People's Republic of China (PRC) has embarked on a broad program to upgrade its military forces. This effort, however, is viewed as secondary to China's domestic economic development. Beijing's defense resources presently are directed

toward low-cost military programs designed to lay the groundwork for significant improvement in combat capabilities over the next decade. Improvements in education, training, organization, tactics, and research and development (R&D) will pave the way for integration of new technologies and upgraded weapons systems in the 1990s. Thus, despite continuing Chinese improvements, the Soviets will remain predominant in all areas of the conventional military balance.

The Soviets also will continue to maintain strategic nuclear superiority over the Chinese for the foreseeable future. Any enhancements to China's strategic forces over the next five years will likely be counterbalanced by improvements in the Soviet missile defense system.

The regional balance between North and South Korea is of great concern to the United States, and is a key factor in U.S. military planning for the Asia/Pacific region. America's determination to stand with South Korea in preserving the common defense has maintained the peace on this strategic peninsula for nearly 35 years. Nevertheless, North Korea persists in modernizing its large armed forces, even at the expense of debilitating its already weak economy. Recent North Korean activities include the continued reorganization of its army, and increased naval and air exercises with the Soviets. With the bulk of its forces forward deployed, North Korea is postured to attack in ways that would maximize surprise. For these reasons, it is not yet clear whether North Korea's recent pledge to reduce the size of its armed forces constitutes a genuine effort to reduce tensions on the peninsula.

The Republic of Korea (ROK) boasts a strong, growing economy roughly four times the size of North Korea's. South Korea also has been modernizing its forces with U.S. assistance. South Korean military modernization programs and the economic asymmetry vis-a-vis North Korea makes the long-term prospect for the Korean balance favorable. Nevertheless, in the face of Pyongyang's historic hostility, and in view of Moscow's penchant for exploiting the aggression of its proxies through direct or covert intervention, our assistance to South Korea must continue.

The inability to find a solution to the Cambodian problem remains the greatest threat to peace and stability in Southeast Asia. Vietnam's occupation of Cambodia continues to cause regional military confrontation and has resulted in an escalation of extraregional tensions as the superpowers and China compete for influence in the region. In exchange for economic assistance and military support, Vietnam has granted the Soviets base rights at Cam Ranh Bay. From there, Soviet naval and air force operations pose a threat to Southeast Asian sea lines of communications and to U.S. naval forces operating in the South China Sea.

Although the Soviet Union and its clients retain advantages in some of the regional military balances, several theater-wide factors favor the United States and its allies. For example, close allies like Japan provide bases and infrastructure support to our forward-deployed forces. Japan's key location, modernization of its self-defense forces, and assumption of new missions also enable it to provide for a major part of its own defense.

The location of the Philippines, at the juncture of Southeast Asian and Western Pacific sea lanes, continues to make it a strategically important site for two large U.S. facilities, Clark Air Base and Subic Bay Naval Base. These bases play a critical role in the fulfillment of U.S. global responsibilities. Recent internal challenges, communist and secessionist insurgencies, and continuing economic problems threaten the stability of democratic institutions in the Philippines. U.S. strategic objectives are tied to the economic well-being of the Philippine people and the stability of their government. Our security assistance program is therefore aimed at defending democratic institutions and helping the Philippines to meet the many threats and challenges to its security and sovereignty.

The continued economic growth of Japan, the rapid development of the newly industrialized countries of the East Asia rim, and the anticipated growth of the Chinese economy will broaden the basis for developing the self-defense capabilities of friendly regional countries. To promote this trend, we are pursuing economic and security policies that tie the United States and friendly nations in the Asia/Pacific region more closely together. These positive economic developments make the long-term regional trends in the military balance appear favorable.

c. The Middle East / Southwest Asia Balance

The oil wealth of the Middle East/Southwest Asia region, its political instability, and its proximity to the Soviet Union make it a target of Soviet aggression -- both ongoing (as in Afghanistan) and potential. Additionally, Iranian terrorism, Teheran's indiscriminate mining of the Persian Gulf and its approaches, and continued Iranian attacks on non-belligerent shipping in the Gulf also represent threats to U.S. interests. Our primary objective is to support the independence of friendly states in the region by assisting their military forces and developing capabilities of our own that would make any Soviet aggression costly, risky, and unsuccessful. The Soviets maintain significant ground and tactical air forces in their military districts contiguous to the region and are actively enhancing support bases for their naval presence in the Indian Ocean. Soviet forces occupying Afghanistan are continuing their efforts to subjugate the Afghan people. At

the same time, they represent over 115,000 combat-ready troops forward-deployed in Southwest Asia.

The Soviet Union's proximity to the Persian Gulf region provides it with a significant military advantage, although it is somewhat offset by the determination of the region's states to maintain their independence as well as by the region's extremely difficult terrain. The Soviets would have to sustain long lines of communication in attempting to seize the Persian Gulf's oil-producing facilities. These communication lines would be vulnerable to air and unconventional ground interdiction; in addition, they would require a large occupying force to ensure local security.

As in the East Asian theater, local military balances play an important role in arriving at an overall regional assessment. In the Iran-Iraq War, the Iranian manpower advantage continues to offset Iraqi predominance in force structure, most particularly in armor and tactical air weapons systems. The result has been a stalemate reminiscent of the Western Front in World War I, in which neither side has been able to gain the upper hand.

With Soviet assistance, Syria is continuing to upgrade its military forces with Soviet-supplied fourth-generation fighter aircraft and other advanced weapons systems. Syria's recognition of its disastrous economic situation, however, has forced a consolidation of ground force units and has resulted in an overall decreased military threat to Israel. The Israeli military modernization program is also facing harsh fiscal realities, however, requiring Israel to make difficult decisions regarding development and purchase of new weapons systems, as in the case of the recently cancelled Lavi tactical fighter. At present, Israel maintains clear advantages in readiness, command and control, and tactical air operations that should provide for its continued security.

India, China, and Pakistan are the major military powers in South Asia, and open conflict between India and Pakistan as a result of long-standing differences is always a possibility. India has force structure advantages over Pakistan, and both countries continue modernizing their military forces. India has successfully tested a nuclear device, and Pakistan may be developing the ability to do so. The military balance between India and the PRC, in which India's advantage in armor is countered by a Chinese advantage in manpower, is greatly affected by the exceedingly hostile geography and climate along their common border, which would impose severe limits on both operations and logistics.

We have improved our capability for projecting military forces to the region. Our U.S. Central Command develops specific plans and operational concepts focused on the region. Its potential force allocation comprises more than six ground divisions and over 600 tactical aircraft. To test these forces and concepts, we have conducted a number of successful exercises with friendly regional states, and our recent convoy/escort and mine-countermeasure operations in the Gulf are providing us with greater familiarity with regional operations. On balance, our improved capability to project significant forces rapidly to the region helps to deter Soviet aggression. Should deterrence fail, we can successfully defend the region with substantially fewer ground forces than the Soviets require to seize and occupy it, provided our forces are strongly supported by tactical air. Such a defense would depend heavily on participation and support by friends and allies in the region.

6. The Maritime Balance

Our capability to protect sea lines of communication, control specific ocean areas, and project power to distant reaches of the globe is vital to Western security and the safeguarding of U.S. interests worldwide. Almost any type of regional or major power conflict involving U.S. interests will require the use of naval forces and the movement of men and materiel by sea. Although the Soviets have improved their naval forces' capabilities, our own shipbuilding and modernization programs have kept pace and we are maintaining a maritime balance favorable to the United States.










Maritime superiority is critical to the United States for both economic and military reasons. It is critical to the Western alliance because of the role U.S. reinforcements play in NATO plans. A cornerstone of our goal of maintaining maritime superiority involves the sharing of missions between the Services to improve the effectiveness of our maritime operations and to ensure efficient use of all our resources. Cooperative efforts in aerial refueling, ocean surveillance, and strike operations support this effort.

The Soviet Navy's primary strategic wartime mission is to deny Western navies access to maritime regions near the Soviet land-mass. The Soviet Navy would concentrate on protecting its SSBN forces and destroying opposing nuclear-capable forces, such as U.S. SLCM-equipped submarines and surface ships, and aircraft carriers. The U.S. Navy's maritime strategy is to control vital sea lanes and to conduct offensive operations in Soviet maritime operating areas and deny the Soviets sanctuary. The force-projection/sea-control missions of the United States and its allies, and the sea-denial missions of the Soviets and Warsaw Pact

are asymmetrical, and this asymmetry drives force structure differences (see Chart I.B.4). The Soviet Navy's force structure in support of submarine warfare in a sea-denial role serves as an example. The Soviet's continual upgrading of the quality of their attack and cruise missile submarines, combined with continued improvements in Soviet naval aviation, has permitted Moscow to begin extending "sea-denial areas" into the southern Norwegian Sea and the northwest Pacific. By the mid-1990s, improved Soviet submarines and more capable surface combatants will represent a significant percentage of the Soviet Navy. The continuing development of Soviet high-performance antiship cruise missiles will strain our fleet defenses; but our defenses will also have improved. The ice-covered waters and harsh weather peculiar to maritime areas near much of the Soviet Union's coast are also important factors in calculating the maritime balance.

Chart I.B.4

NATO and Warsaw Pact Maritime Forces

Maritime Forces	United States	Non-U.S. NATO	Total NATO	Warsaw Pact
Aircraft Carriers 	14	2(2)	16	—
VSTOL Carriers 	—	5	5	4
Helicopter Carriers 	12	2	14	—
Battleships 	3	—	3	—
Cruisers 	36	4(2)	40	36
Destroyers 	68	84(15)	152	60
Frigates 	119	188(25)	307	76
Corvettes 	—	—	—	130
Attack Submarines 	100	129(17)	229	278
Total	352	414(61)	766	584

NOTE: Numbers in parentheses following numbers in the NATO column represent French ships included in the line and column totals.

Continued U.S. efforts at becoming proficient in this environment will add to our warfighting advantage. Additionally, Western improvements in seaborne surface-to-surface, air-to-air, and air-to-surface strike capability will continue to hold the Soviet Navy at risk.

The maritime balance today is complex and the margin of allied superiority is being reduced, although the United States and NATO do maintain a lead over the Soviets in important warfare areas. Despite measurable improvements in the Soviet submarine force, we currently maintain an antisubmarine warfare (ASW) edge. The illegal transfer of advanced propeller construction technology from the West, however, will facilitate further Soviet advances in submarine design. The ASW picture will be complicated by continued introduction of improved platforms on both sides, with an overall declining U.S. advantage. Fleet air defenses will be increasingly challenged by the improved antiship missiles entering both inventories. The possible expansion of Soviet "sea-denial" zones would test U.S. offensive strategy, but will also complicate Soviet reconnaissance and surveillance capabilities. The U.S. Navy will retain significant advantages over the Soviets in tactical air, long-range power projection, sustainability at sea, and in its ability to operate the new and more sophisticated ships entering the inventory. Our continued pursuit of these competitive advantages and our close attention to changes in Soviet naval forces and strategy are necessary to preserve a favorable maritime balance in the future.

7. The Power-Projection Balance

For the last several years my predecessor has commented on the basic asymmetry in the ability of the United States and the Soviets to project power along the immediate Soviet periphery. In order for us to support our friends and allies on or near Eurasia, we must project power at great distances from our shores. Because our forces have long had the mission of operating far from the United States at great distances from their home bases, we currently have a superior ability to project power to locations distant from both the United States and Soviet Union. The Soviets, however, are gradually expanding their capability in this area by developing power-projection assets such as airlift forces and the merchant marine, and through arms sales, increased use of surrogates, and military assistance.

In terms of special equipment necessary for global operations, U.S. forces have, with some exceptions, equipment superior to that of the Soviet forces. The U.S. Military Airlift Command, for example, has aircraft that can be refueled in flight, while its Soviet counterpart has not demonstrated that capability. The

Soviet Condor heavy transport aircraft, however, is a graphic example of the Soviet commitment to project power at greater distances. Larger than the C-5A, the Condor enhances the Soviet's capability to deploy and supply forces outside the U.S.S.R.

Furthermore, the Soviet Merchant Marine is an integral element in Soviet power projection strategy. In supporting Moscow's clients with military equipment, it is well-suited for the small ports of Third World nations. A Soviet Merchant Marine force equipped with new vessels designed with military utility in mind, and possessing a rapid on-load/off-load capability, provides great flexibility in military contingencies at distant locations.

Our own efforts to upgrade power projection forces also have been substantial. U.S. carrier battle groups and Marine Corps units are capable of fighting intense battles on their own, out of reach of our forces based in the continental United States. In contrast, Soviet power-projection forces are, to a large extent, still dependent on assistance originating from bases in the Soviet Union. The Soviet Navy, for example, would experience great difficulties in attempting to counter our carrier battle groups without the support of their land-based aircraft assets. Our airlift and sealift shortfalls are being addressed by new acquisitions and programmed improvements to our active and reserve forces, and provision of the equipment to off-load and move cargo once it arrives. Additionally, mobility has been enhanced by the procurement of three maritime prepositioning ship squadrons to support Marine air-ground task force deployments in the Atlantic, Pacific, and Indian Oceans. The Navy has taken delivery of the first 11 air-cushioned landing craft (LCAC), enhancing the speed, mobility, and diversity of our amphibious assault forces. Finally, the Army's fielding of light divisions also enhances our rapid deployment capabilities.

A continuing element of American power projection is our superior worldwide basing network. Our forward deployments require sea and air links to the overseas bases supporting those deployments. Soviet overseas basing focuses on key geographical areas, employing mostly movable or "removable" assets (e.g., floating piers, tenders, and repair ships; floating drydocks) and building little that is permanent. There are of course exceptions, like Vietnam. Given our asymmetric geostrategic situation, loss of Soviet overseas facilities would not affect Soviet force planning to the same degree that loss of overseas basing would the United States.

Chart I.B.5
Soviet Global Power Projection



SOVIET MILITARY PERSONNEL IN THE THIRD WORLD

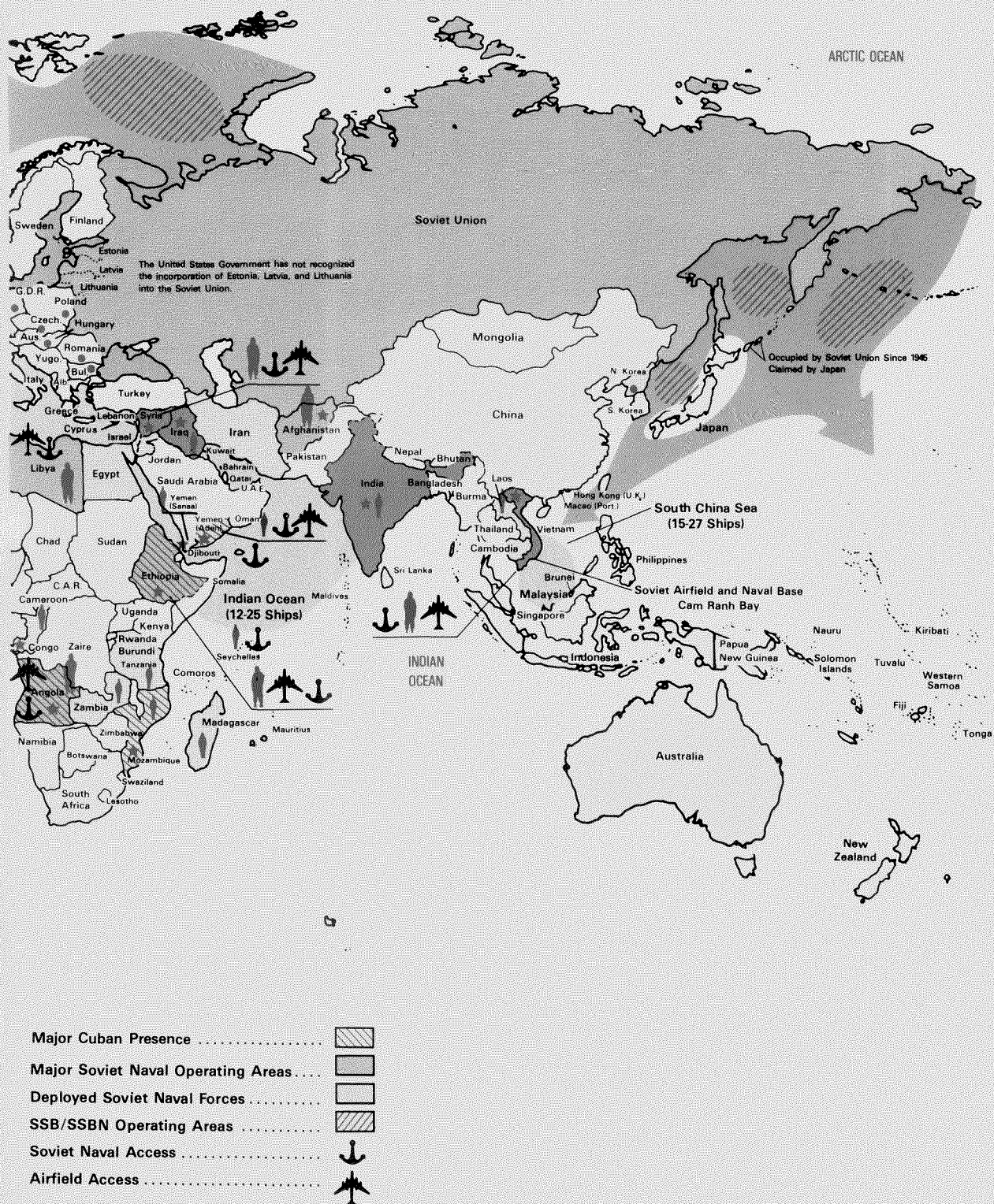
	(Est.)
Latin American (including Cuba)	7,900
Sub-Saharan Africa	3,600-4,000
Mideast and North Africa	8,000-9,000
Asia (including Vietnam)	4,000
Afghanistan	116,000

CUBAN MILITARY PERSONNEL IN THE THIRD WORLD

Latin America	2,000-2,500
Sub-Saharan Africa	38,000-41,000
Mideast and North Africa	300-400

Above \$10 billion	■
\$5 billion - \$10 billion	■
\$1 billion - \$5 billion	■
\$100 million - \$1 billion	■
Soviet Treaties of Friendship	★
Soviet Military/Technical Personnel (less than 1,000) (Excluding Military Attaches)	●
Soviet Military Personnel (more than 1,000)	●
Mutual Defense Treaties	●

Boundary representation is not necessarily authoritative
 *Last deployed in late 1986



Boundary representation is not necessarily authoritative

Security assistance programs continue contributing to our national security objectives by assisting our allies and friends in meeting their defense needs and supporting collective security efforts. For a full discussion of security assistance issues, as well as an overview of regional challenges to U.S. interests, see Chapter I.D.

U.S. links to allies around the world depend upon our continued ability to move and support forces in areas distant from the U.S. mainland. The overall power-projection balance continues to favor the United States, but the Soviets are making significant inroads.

C. U.S. DEFENSE POLICY AND STRATEGY

1. National Security Objectives

To counter the threats to our interests described in the preceding chapter, we pursue what we term "national security objectives." Achieving these objectives is the purpose of our defense strategy and military capabilities:

Our major national security objectives are:

- To safeguard the United States, its allies, and interests by deterring aggression and coercion; and should deterrence fail, by defeating the armed aggression and ending the conflict on terms favorable to the United States, its allies, and interests at the lowest possible level of hostilities.
- To encourage and assist our allies and friends in defending themselves against aggression, coercion, subversion, insurgencies, and terrorism.
- To ensure U.S. access to critical resources, markets, the oceans, and space.
- To reduce, where possible, Soviet military presence throughout the world; to increase the costs of Moscow's use of subversive force; and to encourage changes within the Soviet bloc that will lead to a more peaceful world order.
- To prevent the transfer of militarily critical technology and knowledge to the Soviet bloc, and to other potential adversaries.
- To pursue equitable and verifiable arms reduction agreements, with special emphasis on compliance.
- To defend and advance the cause of democracy, freedom, and human rights throughout the world.

2. U.S. Defense Strategy

Our basic defense strategy is to safeguard the United States and its allies and interests by deterring aggression. Deterrence works by convincing potential adversaries that the probable costs to them of their aggression will exceed their probable gains. We seek not only to deter actual aggression, but also to prevent coercion of the United States, its allies, and friends through the threat of aggression. Successful coercion could give a hostile power the fruits of war without actual conflict. Against Western Europe and Japan, for example, the Soviet threat comprises both overt attack, as well as propaganda and other tactics designed to intimidate and to seduce. Moscow seeks to persuade our allies and friends to distance themselves from the United States, neglect their military capabilities, adopt passive policies such as unilateral disarmament, and ultimately end the 16-nation North Atlantic Alliance and our mutual defense treaty with Japan, which reflect our collective resolve to resist Soviet attempts at domination.

To deter the Soviet Union, America and its allies must make clear to Moscow that we have both the means and the will to respond effectively to aggression against our interests. We emphasize our resolve and ability to respond, but avoid specifying exactly the nature of our response. This is the essence of our strategic doctrine of "flexible response," which has been the foundation of U.S. strategy since 1961 and NATO strategy since 1967. Our forces deter a potential aggressor by confronting him with three types of possible responses:

- *Direct Defense:* To confront an adversary with the possibility that his aggression will be stopped before he can achieve his objectives and without our resorting to actions escalating the conflict. This response is sometimes referred to as "deterrence through denial."
- *The Threat of Escalation:* To warn an adversary that his aggression could start hostilities that might not be confined in the manner he envisions -- that escalation could exact far greater costs than he anticipates, or could bear.
- *The Threat of Retaliation:* To raise the prospect that an attack will trigger a retaliatory attack on the aggressor's homeland, causing his losses to exceed any possible gains. This response is sometimes referred to as "deterrence through punishment."

The responses summarized above are part of our overall defense strategy for safeguarding U.S. interests worldwide. To preserve the common defense, this global strategy for deterring and combatting aggression must be effective across the spectrum of conflict, from nuclear and conventional aggression to what is now termed low-intensity conflict, or LIC.

3. The Strategic Defense Initiative and the Evolution of Nuclear Deterrence

a. The Necessity of Strategic Defense

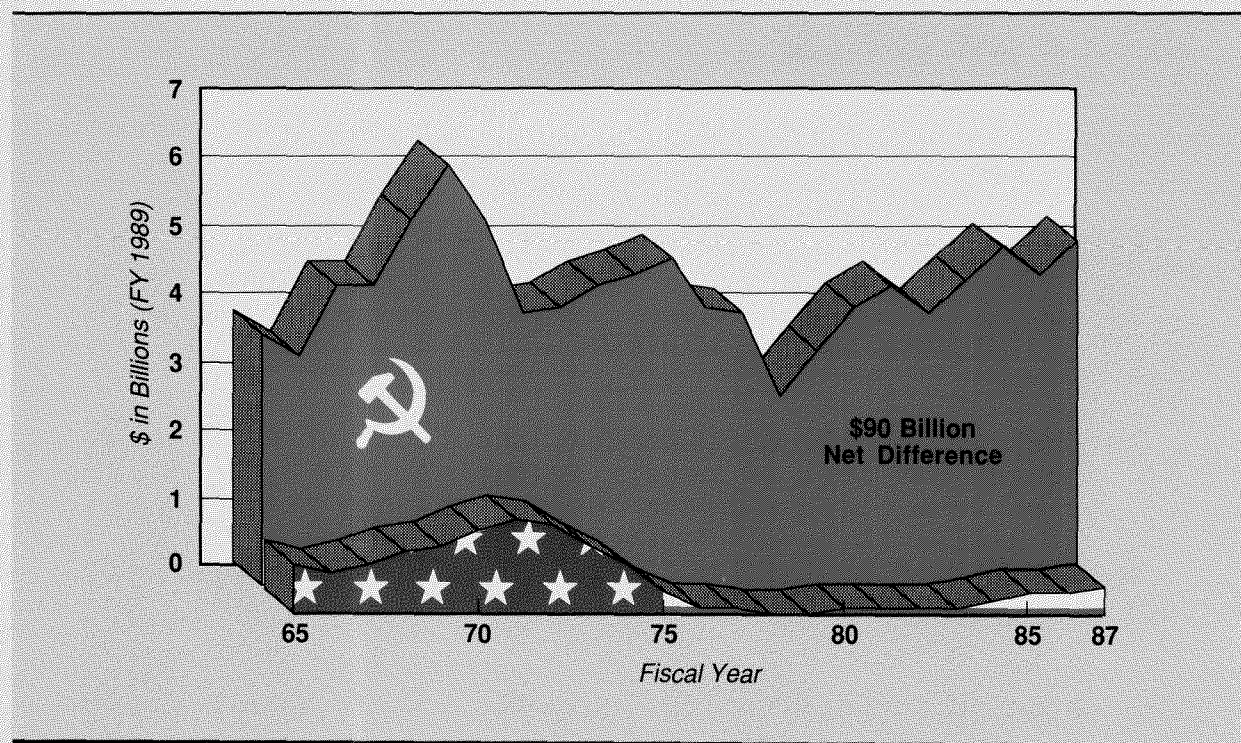
Since the dawn of the nuclear era, the focus of American strategic thought has been on deterring nuclear war by dissuading our adversaries from using nuclear weapons against the United States or our allies through the threat of retaliation. Similarly, we have relied on U.S. nuclear weapons to help deter conventional attack as well.

Efforts to defend against nuclear attack also have played an important role in American post-war strategy, save for a 15-year period between the late 1960s and 1983, when the rapid buildup of Soviet nuclear missile forces combined with a corresponding lag in our progress on technologies for defending against a ballistic missile attack to dampen U.S. interest in strategic defenses. Indeed, it was not until the early 1980s that technological progress allowed us to accord again a high priority to strategic defenses. In 1983, President Reagan announced the Strategic Defense Initiative (SDI) to determine the feasibility of deploying an effective defense against nuclear ballistic missiles for the United States and its allies. On the basis of technical progress in this vital research effort, the United States could have the option to begin deploying the first phase of a strategic defense in the 1990s.

Critics of a deployed strategic defense often cite a concept called mutual assured destruction (MAD) to support their opposition. This concept describes a condition in which either superpower, after suffering an all-out first strike, would retain the nuclear capability to destroy its opponent as a functioning society. According to advocates of MAD, this mutual suicide pact somehow constitutes the bedrock of strategic stability. Because each side can destroy the other, it is argued, war is therefore unthinkable. Some even claim that our deterrent strategy in the 1960s and 1970s was based on MAD. This is simply untrue, as is borne out by the discussion on pages 50-55.

Chart I.C.1

**A Comparison of U.S. Strategic Defense Procurement Expenditures
with the Estimated Dollar Cost of Soviet Strategic Defense
Procurement Expenditures**



Interestingly, the Soviets have never incorporated MAD into their strategy, doctrine, plans, or programs. For over a generation they have been expanding and modernizing not only their offensive nuclear forces, but investing vast sums in strategic defenses and other passive defensive measures as well (see Charts I.C.1 and I.C.2). The result is an extensive, multifaceted, operational strategic air and missile defense network, as well as an active research and development (R&D) program in both traditional and advanced antiballistic missile (ABM) defenses.

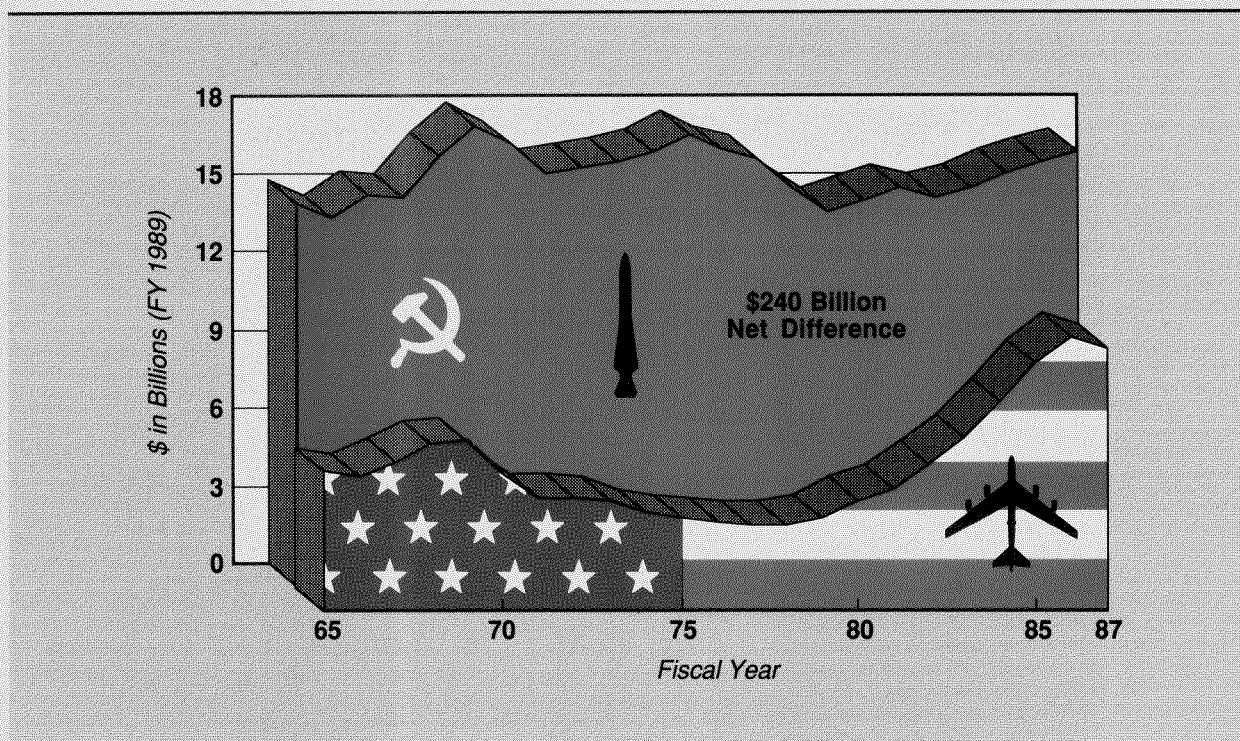
If left unanswered, Soviet offensive and defensive force developments will undermine our ability to deter a Soviet attack. Furthermore, if Moscow obtains a monopoly on advanced defenses against ballistic missiles, the Kremlin might come to believe that it could launch a nuclear attack against the United States or our allies without fear of effective retaliation. At the very least, they might see a realistic chance of successful nuclear blackmail.

Some critics have condemned our SDI program as jettisoning certain deterrence in favor of ineffective defense. Yet even the Soviets understand that it is incorrect to pose this critical issue as a choice between defense and deterrence. In their professional military writings, the Soviets reject the distinction

between deterrence on the one hand and military capabilities -- offensive and defensive -- on the other. The Soviets are well aware that even partially effective defenses can provide a significant deterrent to aggression. The SDI program signals not the abandonment of deterrence, but a desire to fortify it in a way that would actually reduce the risks of war.

Chart I.C.2

Estimated Dollar Cost of Soviet Strategic Air Defenses Compared to U.S. Bomber Program Costs



In short, the deterrent value of strategic defenses derives from the effect these defenses would have on Soviet calculations of the costs and benefits of launching an attack. This type of defense would enable us to influence the Soviet decisionmaker's calculus by diminishing his confidence in the ability of his forces to execute an effective attack, rather than by increasing the severity of our retaliation. A strategic defense need not be "leak-proof" to achieve this objective. Furthermore, such a defense would offer the United States and its allies some protection should deterrence fail, or in the event of an accidental attack.

What is not well appreciated is that a deployed strategic defense would become even more important in a world of balanced reductions in offensive systems which we are attempting to

achieve. It was our resolve to pursue strategic defenses along with our strategic modernization program and LRINF deployment that brought the Soviet Union back to the bargaining table. Once balanced reductions begin, strategic defenses would help to ensure stability during the transition period as we are reducing further our nuclear missiles. Finally, given the Soviet Union's record of treaty violations, deployed strategic defenses could help ensure that once we have negotiated very deep reductions and, possibly in the longer term, the elimination of ballistic missiles, we would not be threatened by their clandestine return.

Regrettably, opponents of strategic defense fail to recognize the role missile defenses can play in securing major reductions in U.S. and Soviet missile forces, and the difficulty of safeguarding such reductions in the absence of strategic defenses.

Abandoning SDI (or accepting severe limitations on research, development, and testing, which would amount to the same thing) would sabotage our offensive arms negotiations. Since 1977, when the Carter Administration put forward the first proposal for major reductions in U.S. and Soviet offensive nuclear weapons, the Soviets have opposed such reductions. Why? In large part because they want both their offensive missiles and a monopoly in strategic defenses. If our SDI is ever given up as a "bargaining chip" with the Soviet Union, the prospect of negotiated reductions and our insurance policy against Soviet cheating on arms control agreements will evaporate.

In sum, our SDI has the potential to move us toward a safer world; one with reduced levels of arms, and with deterrence based on defense rather than the threat of retaliation. We will continue our efforts to convince the Soviets to join us in working out a stable transition toward this sane and achievable goal.

b. Maintaining A Strong Nuclear Deterrent

Despite the prospects for an effective strategic defense system, and the possibility of deep reductions in offensive strategic nuclear forces, the need to keep our nuclear deterrent and our conventional forces strong and ready remains as clear today as it has for well over a generation. Our recent experience in negotiating an Intermediate-Range Nuclear Forces (INF) agreement demonstrates that a strong commitment to maintaining and modernizing effective nuclear and conventional forces provides an essential incentive for the Soviets to negotiate seriously toward true arms reduction agreements.

NATO's commitment toward modernizing its theater nuclear forces, while at the same time pursuing arms reduction talks with the Soviet Union, was essential to our achieving an INF agreement. That unshakable commitment led to the failure of repeated Soviet efforts to block progress in negotiations and split the NATO Alliance. Only when it became clear to Moscow that all of its efforts to derail NATO's modernization plans had failed did the Soviet Union return to the negotiations it had abandoned, and engage in serious dialogue leading to an agreement. It is, thus, with the deepest irony that I regard the claims made by opponents of NATO's INF deployments that they are responsible for the INF accord: if their position had prevailed NATO would be without Pershing IIs or ground-launched cruise missiles (GLCMs), and there would still be over 1,400 deployed Soviet SS-20 and SS-4 warheads.

Just as our commitment to implement the 1979 NATO Dual-Track decision was crucial in achieving an INF arms control agreement, so too is our commitment to the continued modernization of our strategic nuclear forces vital to any chances for success at the Strategic Arms Reductions Talks (START). Implementing the President's Strategic Modernization Program will improve the effectiveness, flexibility, and survivability of our strategic nuclear forces. This program has been accompanied by our START proposals to bring about significant reductions in both sides' nuclear arsenals. As with the INF negotiations, the Soviets were slow to recognize our commitment to the modernization of our nuclear forces, and they refused to engage in serious negotiations. As the deployment of new U.S. strategic systems has proceeded, however, the Soviet's interest in strategic arms control has increased. The prospect of confronting modernized and more effective U.S. strategic nuclear forces has spurred the Soviet Union to negotiate more seriously. Thus, continued support for the President's program is essential, lest the Soviet Union lose its incentive to make concessions at the negotiating table.

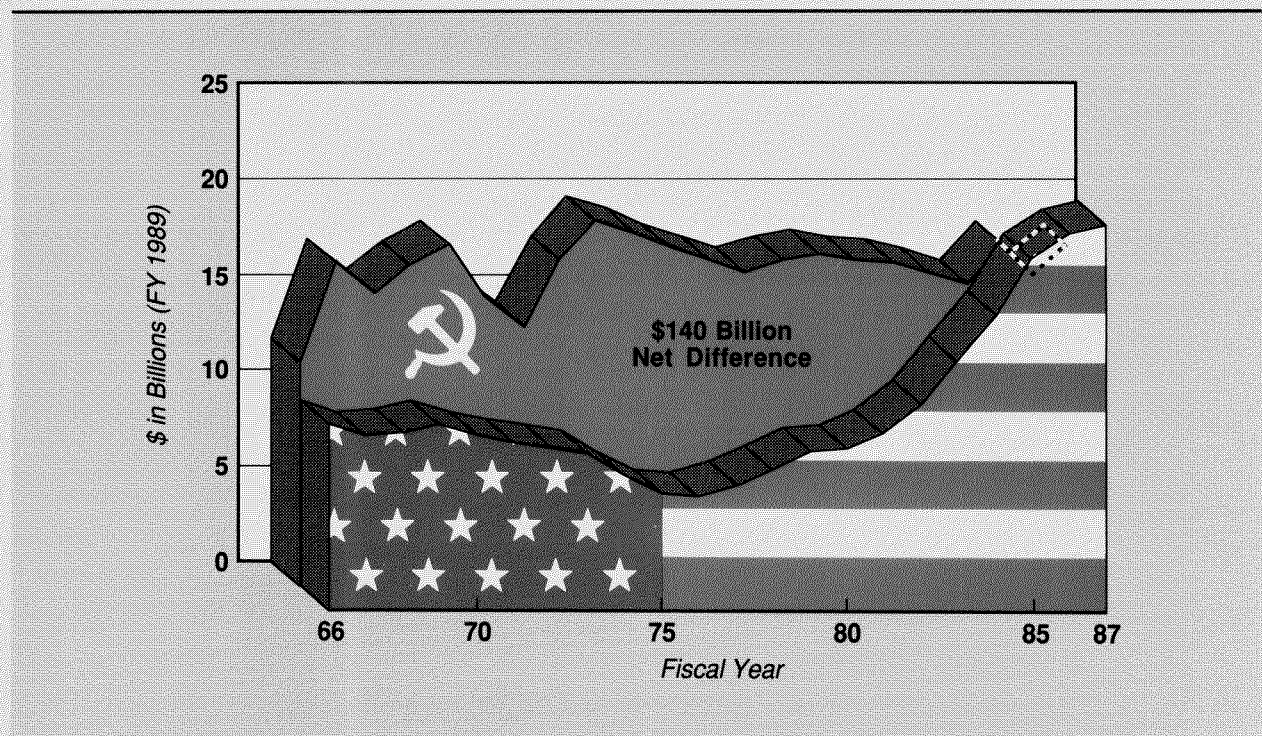
More importantly, modernizing our strategic forces enhances our strategy of deterrence. Indeed, should we reach an agreement on deep reductions in strategic forces, we will possess a sound deterrent only if those forces we retain under an agreement are thoroughly modernized. In rebuilding our nuclear deterrent, we recognize the evidence of Moscow's efforts to prepare for nuclear war, reflecting a Soviet belief that such a war may, under certain conditions, be fought and won. Over the past two decades, the Soviet Union has engaged in a continuous buildup of nuclear forces (see Charts I.C.3 and I.C.4), that is all the more ominous when it is coupled with their:

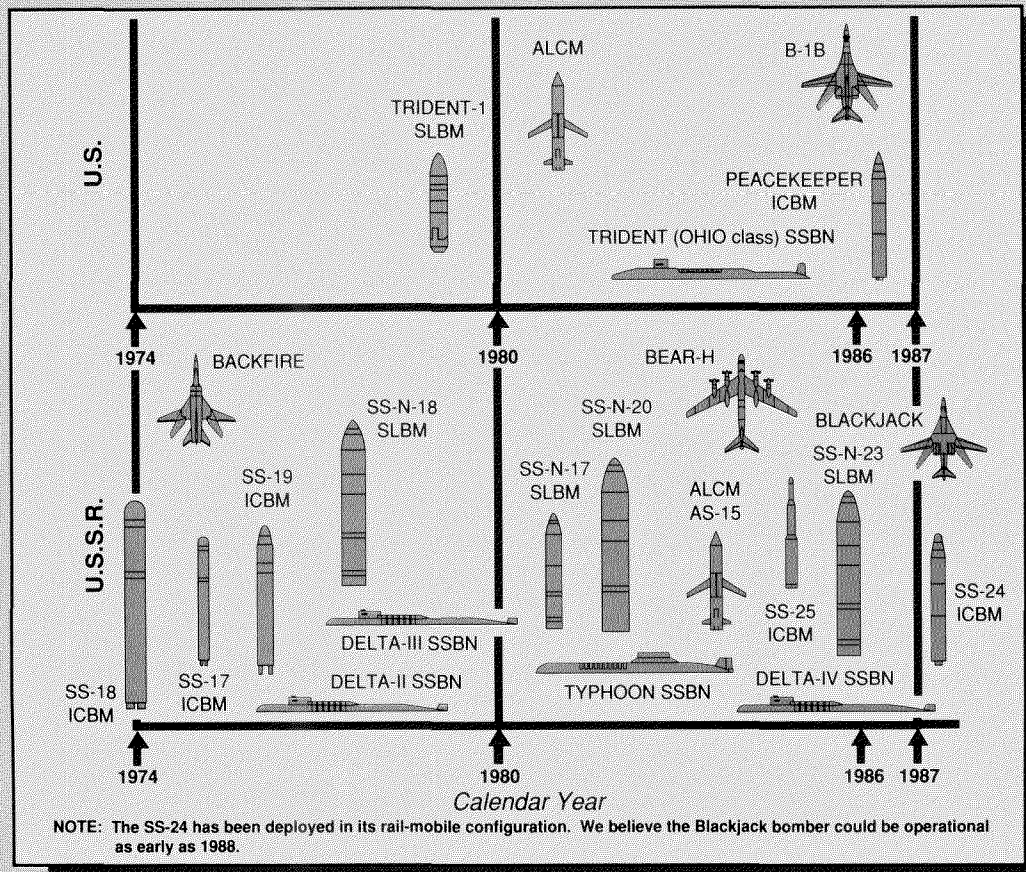
- Increases in air defenses;

- Modernization of the Moscow ABM system with the deployment of what amounts to a new system;
- Continued expansion of a nationwide network of over 1,500 buried command bunkers for the Party and military leadership;
- Ability to reload many of their ICBM missile silos after launch of the first ICBM;
- Reloading exercises and procurement of spares ICBMs to support them;
- Numerous combat exercises involving Soviet nuclear forces; and
- Military writings reflecting a belief that the U.S.S.R. could prevail in a nuclear war, despite hints in recent Soviet political speeches that this perspective may be changing.

Chart I.C.3

A Comparison of U.S. Strategic Force Procurement with the Estimated Dollar Cost of Soviet Strategic Force Procurement



Major Strategic System Deployments

We may not agree with the assumptions upon which the Soviet strategy is founded, but we must design a deterrent strategy that takes these factors into account if we are to remove any temptation for the Soviets to believe they could fight and win a nuclear war. Failing to respond vigorously to this threat simply because we do not believe in its concepts is to misapply the entire notion of deterrence. Our forces, and the doctrine that underpins planning for their employment, are designed to maximize the uncertainties that a Soviet attack planner would face, and to confront the Soviet leadership with an unfavorable outcome in any contingency in which they may contemplate the use of nuclear weapons against the United States or its allies. It is not our intention to fight a nuclear war of any description: "limited" or "protracted." Nevertheless, our forces, and their command, control, and communications (C³) links, must be capable of countering Soviet aggression effectively and, should deterrence fail, of terminating a conflict rapidly at the lowest possible level of escalation.

We deter nuclear attack partially through our nonstrategic nuclear forces, but primarily through our strategic nuclear Triad of intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and strategic bombers. The combined effect of these three reinforcing components complicates Soviet attack planning and its efforts to prevent U.S. retaliation. To deter all types of nuclear attack, our Triad as a whole must possess various characteristics and capabilities -- including survivability, prompt response, endurance, mission flexibility, and sufficient accuracy and warhead yield -- to hold at risk those assets the Soviet leadership values most. No single weapons system incorporates all of these capabilities. Our deployed submarines are practically invulnerable, but SLBMs currently are less accurate than our ICBMs. Our ICBMs have higher alert rates and provide a more prompt response, but their fixed basing increases their vulnerability. Our bombers are accurate and recallable, but their response is slower than that of ballistic missiles. In their entirety, the synergistic capabilities provided by the three types of weapons systems incorporate all of the elements necessary to deter any type of nuclear attack.

Furthermore, the Triad constitutes an important hedge against the possibility that a single Soviet technology breakthrough (in antisubmarine warfare, for example) could threaten our overall deterrent capability. By maintaining an effective triad, we compel the Soviet Union to disperse its resources against three components, as opposed to concentrating them on defeating only one or two U.S. strategic systems.

The effectiveness of our strategic Triad of deterrent forces is being enhanced further by deployments of B-1B bombers and Peacekeeper missiles. Deployment of the full force of B-1Bs and the first 50 Peacekeepers is planned for completion during this fiscal year. In addition, the Trident II (D-5) SLBM, whose survivable hard-target kill capability is so vital to flexible response, is well on the path to its initial deployment in December 1989. This past year also saw further successful development work on the Advanced Cruise Missile and Advanced Technology Bomber; both programs will add substantially to our deterrent capabilities.

In light of the INF Treaty and the resulting reductions in the size of our nuclear forces in Europe, it will be particularly important for our remaining forces to be as survivable, responsive, and effective as possible. Thus, improving our theater nuclear forces to maintain the credibility of our reduced nuclear weapons systems in Europe will become increasingly important.

In addition to making hardware improvements, we have devoted a great deal of thought and effort to developing more selective, discriminating, and controlled responses to the wide and varied nature of potential Soviet acts of aggression. This flexibility -- which follows directly from the requirements of flexible response as initially set forth in the early 1960s -- increases our ability to deter both nuclear and nonnuclear attacks against us or our allies. In doing so, the United States recognizes that a Warsaw Pact decision to attack NATO would come from Moscow, and accordingly, the United States has the capability to respond selectively against the source of aggression while avoiding striking non-belligerent states.

4. Deterrence and Conventional Defense

a. Deterring Nonnuclear Aggression

To deter nonnuclear aggression we rely on a combination of nuclear and nonnuclear U.S. and allied forces, which together can respond to an attack by denying an enemy his objective through effective defense, by escalating the conflict to a higher intensity or more favorable location, or by retaliating to make our enemy's costs exceed his potential gains. Thus, this combination of forces deters by making the outcome of aggression uncertain, and by posing probable costs that will exceed the anticipated gains in the minds of any potential aggressors.

Effective defense using conventional forces has several important advantages over nuclear retaliation. First, it is more credible to potential aggressors contemplating nonnuclear aggression. Second, it is particularly attractive in blocking attempts at intimidation by a hostile nation. In Western Europe, for example, a stronger conventional defense posture would provide citizens and their governments increased confidence to resist Soviet threats and attempts at coercion.

Indeed, the importance of conventional forces as an integral part of our deterrent has been increasing over the years for a number of reasons. First, the Soviet Union's long-term buildup of its strategic offensive and defensive forces that began in the 1960s effectively ended the U.S. nuclear superiority that existed in the two decades following the end of World War II. As the Soviet capability to inflict massive damage on the United States' homeland has grown, our early resort to nuclear weapons in a conflict has become less desirable. While the United States and its allies reserve this option, the Alliance cannot rely on it too heavily. Indeed, we all recognize the importance of raising the

nuclear threshold by strengthening our conventional forces, thereby improving our ability to respond to nonnuclear aggression.

Second, the Soviet Union's continuing emphasis on building up its conventional forces, especially in Europe, and refining its doctrine for a theater strategic offensive, highlight the emphasis Moscow places on conventional forces. As noted in Chapter I.B., a serious imbalance exists between the Warsaw Pact and NATO in tanks, artillery, and manpower. Improvements in the quality of Soviet equipment and increases in the Pact's prepositioned war stocks are equally disturbing. The improvements in Soviet power-projection capabilities also suggest the importance of monitoring and repairing, as necessary, the conventional balance in areas vital to U.S. interests.

Third, the elimination of ground-launched ballistic and cruise missiles with ranges between 500 and 5,500 kilometers under the INF Treaty, combined with the potential for deep reductions in strategic nuclear systems, underline the importance of our conventional forces' contribution to deterring Soviet aggression, especially in Europe. Conventional force improvements will help to ensure that negotiated reductions in nuclear arsenals enhance the Alliance's overall deterrent posture and its ability to execute NATO's flexible response strategy.

Fourth, the possibility of new and possibly more productive conventional forces arms control negotiations highlights further the need for our continued attention to conventional force modernization. As we learned in the INF negotiations, the Soviet Union is far more likely to negotiate in the face of a determined modernization effort than it is if it possesses a position of undisputed strength.

Finally, as we have witnessed on many occasions in the past, our conventional forces are the ones most likely to be actively and visibly protecting our interests on a day-to-day basis. From our forces in the Persian Gulf to our forward-deployed forces in the Republic of Korea and NATO, U.S. general purpose forces, under the umbrella of a secure nuclear deterrent, are essential to the deterrence of war on the middle and high end of the conflict spectrum.

Our ability to deter and, if need be, repulse nonnuclear aggression also requires that we maintain a chemical warfare deterrent. Today the Soviet Union maintains the world's most formidable capability to conduct chemical warfare, both offensively and defensively.

Our efforts to acquire a chemical deterrent -- that is, a strong chemical defensive posture and a credible retaliatory capability based on binary weapons -- has achieved some success. We are fielding improved defensive equipment and procuring our first new chemical munitions since 1969. Mindful of the proliferation of existing chemical agents among Third World states, however, as well as the threat posed by new agents, we must maintain both the defensive and retaliatory aspects of our carefully thought out chemical deterrent effort.

In August 1987, we submitted to the Congress a preliminary assessment of long-range standoff chemical weapons systems. The report responded to congressional concerns that we look for effective ways to enhance our chemical deterrent, and its findings will guide our future efforts in this area. Similarly, we must pursue defensive improvements to keep pace with the rapidly changing nature of the chemical threat and the impact of new technologies.

We are also encouraged that our chemical modernization effort has had an apparently favorable impact on arms control negotiations with the Soviet Union. We must continue these efforts as we engage in the next round of multilateral discussions at the Conference on Disarmament in Geneva, and in bilateral discussions with the Soviets.

b. Should Deterrence Fail

As George Washington noted, "To be prepared for war is one of the most effectual means of preserving peace." Our purpose is to prepare for war so well that we successfully deter aggression. Should deterrence fail, however, our strategy calls for securing all U.S. and allied interests, denying the aggressor his war aims, and causing or convincing him to stop his aggression.

In responding to a nonnuclear attack, the United States would act to defeat the attack and to convince the attacker that his continued aggression would entail grave risks to his own interests. Our strategy seeks to terminate any conflict at the earliest practical time and to restore peace on terms favorable to the United States, its allies, and friends. While our goal is to limit the scope of any conflict, U.S. strategy provides for the flexible and sufficient application of force to ensure that no area of vital interest is lost by default.

We have also maintained the option of geographic, or horizontal, escalation as an element of U.S. strategy. This option would see U.S. forces conducting military operations in other regions where a combination of our advantages and Soviet

vulnerabilities may enable us to restore peace on favorable terms to us. While in any conflict we would always weigh the option of geographic escalation carefully, we also would not want Moscow to believe that our response to any contemplated aggression would be confined to the Kremlin's chosen point of attack.

Although our conventional forces are structured primarily to counter the Soviet threat, they must also be prepared to deter and, if need be, actively combat aggression at the lower end of the conflict spectrum. Indeed, it is in the low-intensity conflict environment that our general purpose forces have found themselves most actively engaged over the past thirty-five years. The following discussion outlines the threat we face from these forms of ambiguous aggression, and what our strategy is for countering it.

5. Low-Intensity Conflict

Low-intensity conflict (LIC) poses a major threat to our security and our interests around the world. LIC involves indirect, or ambiguous, aggression such as terrorism, subversion, and insurgency. These forms of conflict are employed by our enemies to undermine this country's political, economic, and moral vitality. By engaging in the protracted warfare common to LIC, our enemies hope to assault our resolve and ultimately to isolate us from our friends and allies. In the case of the Soviet Union, its resort to these forms of aggression, which seek to exploit instability, particularly in the Third World, are an attempt to circumvent our conventional and nuclear strength. Indeed, the very success of our nuclear and conventional deterrents actually encourage the Soviet's use of LIC's indirect approach.

Our enemies' strategy can be seen clearly in the case of Grenada. Here a small coterie of communists seized power and began imposing a totalitarian form of government with the advice and support of the Soviets and the Cubans. Their ultimate purpose was to convert Grenada into yet another outpost for regional subversion. Our liberation of that island and the capture of plans, documents, and considerable storehouses of arms afforded us a rare opportunity to see behind the facade of subterfuge that characterizes the Soviet's attempt to establish communist dictatorships, while hiding behind well-chosen phrases pleading democratic principles.

One type of low-intensity conflict -- terrorism -- has taken on a new character. What once was largely the activity of small, frustrated extremist groups within countries has become a virtual multinational enterprise, and state-sponsored terrorism has emerged as a new weapon in the arsenal of ambiguous aggression.

This is not to suggest a vast, single-minded conspiracy manipulated by one source. Instead, what is emerging is an underground, or parallel, international system in which various states are engaged in creating, supporting, training, arming, or providing diplomatic cover for terrorist organizations. The terrorist attack on Marines at the Beirut Airport; the slaughter of innocents on planes, ships, or in cabarets; or the intimidation of diplomats exercising non-violent means of reconciling differences have become standard practice for the enemies of the Western democracies.

Years of stability and prosperity in this country, Europe, and Japan led to an atmosphere of complacency, and a growing unwillingness to accept risk in the name of responsibility, or to defend interests with force if called upon. Ironically, this sentiment emerged from the years of peace our strong defense has made possible. It now appears, however, as if that very strength and the security it has afforded us have led many to assume that peace and security are matters of fact, and not the result of our strenuous effort and enduring vigilance. This complacency threatens to turn our strength into a weakness, one our enemies are now exploiting.

LIC uses the instruments of peace, the pretense of accommodation, our commitment to moral principle, and the very language of freedom and democracy as weapons to undermine our resolve. In this struggle, the war of words and ideas has become every bit as important as the force of arms.

The challenge of LIC, then, is a formidable one. In meeting it, we must address not only the problems posed by our enemies but also the many problems plaguing the developing world. The United States must work with others to alleviate the social, political, and economic conditions that deprive so many of the world's peoples of basic rights or the means of living. Obviously, we are called upon to do this as Americans, and as human beings, but we also are summoned to this task because the Soviets and their proxies have proven so adept at exploiting instability for their aggressive purposes. The communists and others seek to exploit poverty and injustice by imposing a system of government whose cruelty is documented by history. We must take measures to protect our friends and allies, and work to free those who have lost their liberty and dignity under totalitarian systems.

This is not an enterprise, however, that promises instant success, nor is it a burden we can bear alone. We must work with others to achieve a common aim. The essence of our policy of assisting those who share our ideals must be one of patience and of helping others help themselves. For these reasons we have placed great emphasis on long-term economic and political

development. This philosophy also underlies our security assistance effort and our humanitarian and civic assistance projects.

Since the advent of this Administration, we have seen the spread of democratic principles and the growth of freer, more open societies. Just eight years ago, for example, only two democratic governments -- Venezuela and Colombia -- existed in South America. Today, only two military regimes -- Chile and Paraguay -- survive among this continent's 11 republics. The face of the map in Central America now includes the democracies of Guatemala, Honduras, and El Salvador, as well as Costa Rica. In the Philippines, Mrs. Aquino leads the democratic reinvigoration of one of our staunchest allies. We know, however, that democratic societies are, in their early stages of development, more vulnerable to subversion or overthrow. Emerging democratic governments must be provided with more than moral encouragement; they must receive the material support designed to promote and protect their development. Nor can we afford to cease working with others whose more authoritarian forms of government are offensive to our principles in the belief that our neglect will improve their future. The defense of our ideals and interests demands our involvement to counter the ambiguous aggression of our adversaries.

Our range of activities at the lower end of the conflict spectrum includes support to nations facing insurgent threats and to groups resisting communist aggression; peacekeeping operations (such as in the Sinai); peacetime contingency operations (such as against Libya or current operations in the Persian Gulf); and counterterrorism efforts.

a. Insurgency and Counterinsurgency

The period following World War II was a time of rapid change involving the collapse of European overseas empires, the liberation of countless peoples from colonial rule, and the emergence of many new states. In many cases the experience of independence and self-government did not produce a stable political order. Economic and social problems further complicated the difficult task of nation-building. If these problems were not enough, a number of groups, many inspired by communist doctrine, sought to exploit these problems to seize power through insurgency warfare, which combines Leninist subversive political organization techniques with guerrilla tactics.

The insurgent's goal is the development of a long-term political-military program, using protracted warfare to subvert and overpower governments in order to establish a totalitarian dictatorship. Cambodia, Nicaragua, Cuba, and Vietnam clearly

illustrate the fate of societies that succumb to communist insurgents. Now El Salvador and the Philippines face similar threats.

It also has become clear that the Soviets, the Cubans, and others are only too willing to assist communist insurgents, and are investing considerable resources to promote and sustain them. There are training centers and field advisers to assist in developing clandestine organizations and guerrilla units, subversive groups, and terrorist organizations. There is a sophisticated international propaganda program to legitimize these movements and, as in the case of El Salvador, political pressure that is brought to bear on disparate insurgent groups to unify their efforts. Once the insurgents are in power, however, the Soviets and their clients step in to consolidate control. In Nicaragua, for example, the Soviets supply major equipment; the Cubans provide security advisors, teachers, and doctors; the East Germans render advice on internal security forces; and so on. The pattern, revealed by the Grenada documents, can be discerned in South Yemen and Afghanistan as well as in Nicaragua.

In responding to these threats, our role is not to shoulder the burden ourselves, but to assist others in defending themselves. To accomplish this, we must train host nation forces in the technical skills needed to accomplish their mission, and we must work with the leadership of these countries to help them along the road to competent, just civilian government. Furthermore, we must not forget the importance of security. We must be prepared to provide the training, advice, technical support, intelligence, and other assistance necessary to ensure that host nations' military forces are well-trained, professional, and able to support the broad political-military programs essential to defeating insurgent movements. These local security forces will provide the shield behind which educators, doctors, and civil servants can carry out essential reforms. We must also recognize that security assistance is our most potent instrument. Security assistance is not to be viewed as the indiscriminate sale and transfer of arms to others but, rather, as assisting our friends or allies in providing the internal security essential to the growth of democratic institutions.

Our support is not only valuable to those nations that we believe are essential to preserving the common defense, but it also applies to various groups struggling against communist domination. Our support in the struggle for freedom and the safeguarding of democracy must also extend to those, such as the Nicaraguan resistance and the Afghan Mujahideen, who have seen their countries subverted or conquered by totalitarianism.

b. Peacetime Contingency Operations

As Grenada clearly demonstrated, the Soviets and their clients are willing to use subversion to expand their influence. Other states, Iran and Libya for example, also employ indirect or direct aggression and sponsor terrorist attacks on U.S. citizens to gain their ends. We must be able to counter such threats when they arise and deter ambiguous aggression in the future. This requires a range of capabilities, from special operations to general purpose forces, equipped and trained to respond immediately and decisively when called upon.

Our response to Libyan terrorism underscores our willingness to respond with force when reason has failed. The decline of Qaddafi's overt use of terrorism is testimony to what effective action taken in a timely way can achieve. Our current efforts in the Persian Gulf demonstrate further our resolve to defend our interests and to provide support to our friends and allies. We, along with our allies and friends, are determined to protect our interests and the rights of Freedom of Navigation in this critical region.

c. Peacekeeping Operations

Our military strength and our policy of deterrence have helped to prevent a major international war. Yet many areas of the world remain torn by unresolved tensions that can lead to the disruption of peace and the onset of conflict. As part of our commitment to international peace, the United States has employed its forces in peacekeeping efforts designed to separate belligerents and give them the time and the opportunity they need to resolve their differences amicably. Today, for example, U.S. forces are deployed in the Sinai as visible symbols of our effort to promote peace in the Middle East.

d. Counterterrorism

The growth of international terrorist organizations and the use of terrorism by a number of states as part of their foreign policy has changed the complexion of international relations. In countering terrorism, we must: develop and sustain our intelligence capabilities to penetrate and expose terrorist plots; work to bring terrorists to justice and to persuade their supporters to cease their support; preempt their attacks; and maintain the ability to defend successfully against those terrorist attacks that do occur. We already have undertaken significant steps to achieve these goals by developing special operations forces to

respond to specific situations, and by enhancing the training and capabilities of our general purpose forces to counter the terrorist threat.

Significant progress has also been made in securing the cooperation of friendly nations, where the timely exchange of information has made possible the pre-emption of some terrorist attacks and the apprehension of several key terrorist figures. While we may never eliminate terrorism entirely, we are working to create an environment that makes it far more difficult for terrorists to achieve success.

e. Conclusion

The threat from low-intensity conflict lies in its insidious nature, and in its ability to misdirect attention from its ultimate consequences. We must remember that our enemies' purpose is to pursue ambiguous aggression to disarm our resolve and undermine our sense of purpose. LIC is one of the most serious challenges to our security that we face today, and our survival and well-being could depend on how we comprehend the threat and respond to it.

6. Supporting Defense Policies

a. Collective Security

For free peoples, cooperation is essential to the preservation of our security and our values. Our system of alliances for collective security enables us to share our common security burdens and achieve a division of labor capitalizing on the relative strengths of each state. Our alliances with the nations of Europe, East Asia, and our own hemisphere, together with other important security relationships in those regions and in the Middle East and Southwest Asia, are critical strands in U.S. strategy.

Collective security requires that our forces, and those of our allies, be able to fight together effectively in combined operations. It also requires a coherent program of security assistance and a sharing of key technologies, so that each alliance partner can increase its capabilities for the military role it accepts for itself. For a complete discussion of how collective security preserves the common defense, see Chapter I.D.

b. Balance of Forces

To protect our mutual interests, the United States and its allies must maintain military capabilities sufficient to make our defense strategy credible and effective. This does not mean that we and our allies must match our adversaries in every category of weapon system, e.g., number of tanks, aircraft, ships, etc. The calculus of deterrence and defense comprises many more variables than mere quantitative aggregates of weapons systems. At least as important are the performance characteristics of the weapons, the quality and morale of people operating them, and the operational methods and tactics used. Moreover, geography and the unique features of a specific security mission decisively affect the military forces needed. Finally, the cohesion of our alliances -- into which our partners have joined freely, in contrast to the alliances of the Soviet Union -- also relieves us from having to match the Soviet threat weapon for weapon. All these variables, plus others, are weighed against the threats to our security in determining our military requirements for protecting U.S. interests and meeting our commitments.

In 1981, the largest problem we faced stemmed from a 20-year Soviet arms buildup, which was accompanied in the 1970s by a 20 percent real reduction in our defense effort. The global military balance -- in Soviet terms, the "correlation of forces" -- was shifting in favor of the Soviets in their view as well as ours. Through an investment nearly 50 percent larger than our own, the Soviets were buying advantages in virtually every area of comparison -- e.g., in nuclear forces, in the NATO-Warsaw Pact balance, and in Southwest Asia.

With the dramatic strengthening of our military forces since 1981, we have made substantial progress toward ensuring a balance of forces sufficient to keep our strategy credible and effective. Regrettably, mandated reductions in our defense effort based on domestic necessities, rather than on an assessment of the threats to our interests, may well see the United States operating on the margins of deterrence. If we falter while the Soviet buildup continues unabated, we will pay a price in the form of increased risks to our national security.

c. Superior Technology and Quality

We and our allies continue to depend heavily on our superior military technology to offset the numerically larger forces threatening our security interests. Modern technology makes our systems more effective and more survivable. Additionally, a strong technological edge can protect us against scientific

breakthroughs by our adversaries, which could seriously erode our forces' deterrent and defensive capabilities. We must remember, however, that mere laboratory advances do not deter aggression. New technologies must be developed and fielded. If we are slow in deploying advanced systems, our technological edge on the battlefield will quickly erode.

To ensure that America's technological advantage over the Soviet Union is preserved in the decades ahead, the Reagan Administration is dedicated to promoting a strong national educational, scientific, and industrial base, while guarding against the inappropriate transfer of technology to the Soviet bloc. Although the West's technological lead remains sufficient to maintain a stable military balance for the present, the technological balance would shift markedly toward the Soviets if the flow of critical Western defense technology to the Soviet bloc is not arrested.

d. Forward-Deployed Forces

The United States cannot deter aggression against its worldwide interests with U.S.-based forces only. We need modernized, forward-deployed forces that increase our ability to respond effectively and quickly in the event of a conflict, and to bring it to a favorable end. Forces positioned in this manner also reassure our allies of our commitment to our common security, while facilitating in peacetime the integration of U.S. and allied forces in wartime.

e. Flexibility

Because we know we can never be certain about the location, time, and nature of future aggression against our interests, and because our defense resources are not unlimited, our forces must be flexible enough to respond to a variety of contingencies. Thus, we field forces that are adaptable to a broad spectrum of conflict environments and missions. We also accord high priority to strategic mobility -- our ability to deploy and sustain our forces over great distances.

7. Matching U.S. Interests, Strategy, and Capabilities

A key basis for evaluating our defense strategy is to consider how appropriate and well-matched are U.S. interests, strategy, and capabilities. In an ideal world, our interests,

strategy and capabilities would be exactly matched. U.S. and allied military capabilities would be sufficient to give us virtual assurance that, through our defense strategy, we could safeguard our shared interests against any reasonable threats. Such a state, in essence, would eliminate from our security concerns the element of risk -- risk being the difference between what we need and what we have to preserve the common defense. But the total elimination of risk in security matters is not feasible. Therefore, our goal is to keep that risk down to a level consistent with our nation's wealth, values, and security interests.

There are several options for reducing America's security risks. Some of these options are wise; others are shortsighted and dangerous.

a. Reducing Threats

The optimal, yet slowest-working and least certain option for reducing U.S. security risks is to diminish the threats to our interests. It is the least certain because its success depends on factors outside our control. Still, a key component of U.S. foreign policy and defense policy is trying to reduce the Soviet threat through such means as:

- Convincing Moscow to restrain its military expenditures, cease its aggression, and stop its exploitation of instabilities around the world;
- Negotiating genuine, verifiable reductions in nuclear arms and nonnuclear forces;
- Keeping our military-related technology out of Soviet hands; and
- Pursuing what we term "competitive strategies," which are programs that align enduring U.S. strengths against enduring Soviet weaknesses, thereby rendering Soviet military power less potent over time.

We also try to reduce other threats to our security interests, but these efforts, too, require time and patience. For example, reducing or eliminating -- as opposed to countering -- the Iranian threat to peace in the Persian Gulf region will likely prove a long, arduous task.

b. Scaling Back U.S. Interests

Another option for improving the matching of U.S. interests, strategy, and capabilities is to scale back U.S. interests. This option may sound especially tempting because it can be accomplished with a simple U.S. declaration that we are no longer willing to safeguard some security interest or ally. But I am convinced it is not a possible option if we want to keep our freedom.

To those who say we should scale back U.S. interests, I would ask: Which mutual defense treaties should we repudiate? Which allies or friends should we abandon? From which international cause should we retreat? Which American interest should we give up? For these questions, I know of no answers that would enable America to continue along the road that U.S. presidents and Congresses have followed since 1945. Shielding U.S. interests worldwide provides security for our values and future prosperity. A breach or weak spot in that shield could endanger the whole and would call into question America's resolve as leader of the world's democracies.

The interests this Administration seeks to protect are essentially the same as those endorsed by previous administrations. Indeed, in the nature of things, America's interests and goals rarely change; and in the last three decades, America's alliances, treaties, and cooperative arrangements -- which exist to safeguard our interests -- also have changed very little.

We must constantly review and revalidate our interests worldwide, which is what we do now, both in the executive branch and in the Congress. But there is no prudent way to scale back U.S. interests while remaining true to America's values, maintaining our alliance commitments, and safeguarding our future.

c. Changing U.S. Defense Strategy

Those reluctant to increase America's military strength to secure our interests sometimes charge that this Administration's strategy is "to fight everywhere around the world at once." This is not our strategy, nor has it ever been.

Our strategy is to deter aggression against the United States, its allies, and its interests so we will never have to fight anywhere in the world. We and our allies seek to do this by maintaining forces that are capable of responding quickly and effectively to the most serious threats to our interests. We also

want these forces to be flexible and strong enough to give us credible responses to other threats as well. Should aggression occur in several regions simultaneously, our military responses would be governed by existing commitments, general strategic priorities, the specific circumstances at hand, and the availability of forces.

Thus, our strategy recognizes that a variety of factors would affect the nature and locations of our military actions; our strategy is not to try to fight "everywhere at once." The key point is this: to deter aggression, we and our allies do not plan to maintain all the forces required for a high-confidence, simultaneous defense against all threatened or potentially threatened areas. But we do require forces sufficient enough to ensure that our adversaries are not tempted by what they perceive is our weakness.

This strategy for credible responses to aggression against our interests is not new. It has been U.S. strategy since we abandoned the doctrine of massive retaliation in the 1950s. It has served us well, for example, by maintaining peace on the Korean peninsula, despite the North's openly stated aggressive intentions, even when U.S. forces were involved in contingencies elsewhere. What is different is this Administration's conviction that to deter convincingly, we must have the military strength necessary for actually carrying out credible responses. Otherwise, we have "hollow" forces, leaving us with a "hollow" strategy.

The military forces we have advocated since 1981 to support U.S. strategy are not radically larger than those envisioned by our predecessors. The difference is that we and the Congress recognized that these had to be highly capable, ready forces.

In sum, no change in U.S. strategy can reduce our defense needs without incurring significant additional risks to our security. Our strategy is to deter aggression by our capacity to respond to it. The only alternatives to a strategy of credible response to aggression are early capitulation, early escalation, or the abandonment of our allies and interests. Absent a withdrawal to isolationism, there is no easy strategy "fix" that can reduce the requirements of deploying forces where they are needed and giving those forces the weapons and support essential to their effectiveness. Any conceivable, effective strategy will always require forces strong enough to respond to aggression.

d. Strengthening America's Military Capabilities

Our nation, in summary, has only a limited, long-term potential for easing our defense burdens through reducing threats, scaling back U.S. interests, and changing our defense strategy. Moreover, we know we can never secure even this long-term potential unless we are strong enough to induce the Soviets and other adversaries to enter into such threat reduction agreements with us. Consequently, our primary option must be to ensure that we have military capabilities strong enough to support our strategy and keep our security risks at a prudent level.

Even without a precise answer to what level of risk we should accept, it seems clear that we want to bolster our military capabilities for defense missions and for areas of U.S. interest according to the following guidelines:

- We and our allies must have credible military responses, the prospects of which convince our adversaries that aggression would mean unacceptably high costs to them. So even though we do not specify the nature of our responses, our strategy is never to tempt our adversaries to believe that they could pursue aggression at low cost.
- We should, as a minimum, be capable of countering ongoing improvements in Soviet military power. This capability is especially important to us, since we continue to rely on our technological superiority to help offset the Soviet's numerical advantages. We must modernize rapidly enough to ensure that we never are forced to send our forces into battle without all of the advantages that our nation can offer.
- We should rectify vulnerabilities in our forces and correct clear inadequacies (e.g., ineffective counters to key Soviet weapons, insufficient ammunition).

Keeping America's security risks at a minimum is the ultimate objective of our nation's defense budget. Although our current budget request is below what many of us would prefer, it will -- if fully funded -- help us to preserve our gains of the past seven years.

8. Conclusion

In summary, America's defense strategy is a sound approach for achieving our goal of preserving our interests, which themselves reflect central U.S. values. While we will continue our efforts to reduce the threats facing us through peaceful means, the most prudent course of action for preserving the common defense at present is to maintain adequate military capabilities, as prescribed in this report. At the same time, we should -- and do -- monitor constantly our defense commitments around the world, ensuring they are consistent with our interests in the face of ever-changing circumstances. We also work continually to refine our overall strategy to achieve the maximum deterrent and defense capability for the forces our constrained resources permit us to field. Our adversaries, however, are not cutting back on their efforts and continue improving their military capabilities. Consequently, even though our military posture may not regress to 1981 levels, under our current budget request we will be forced to live with increased risks to our security.

D. COLLECTIVE SECURITY

1. Introduction

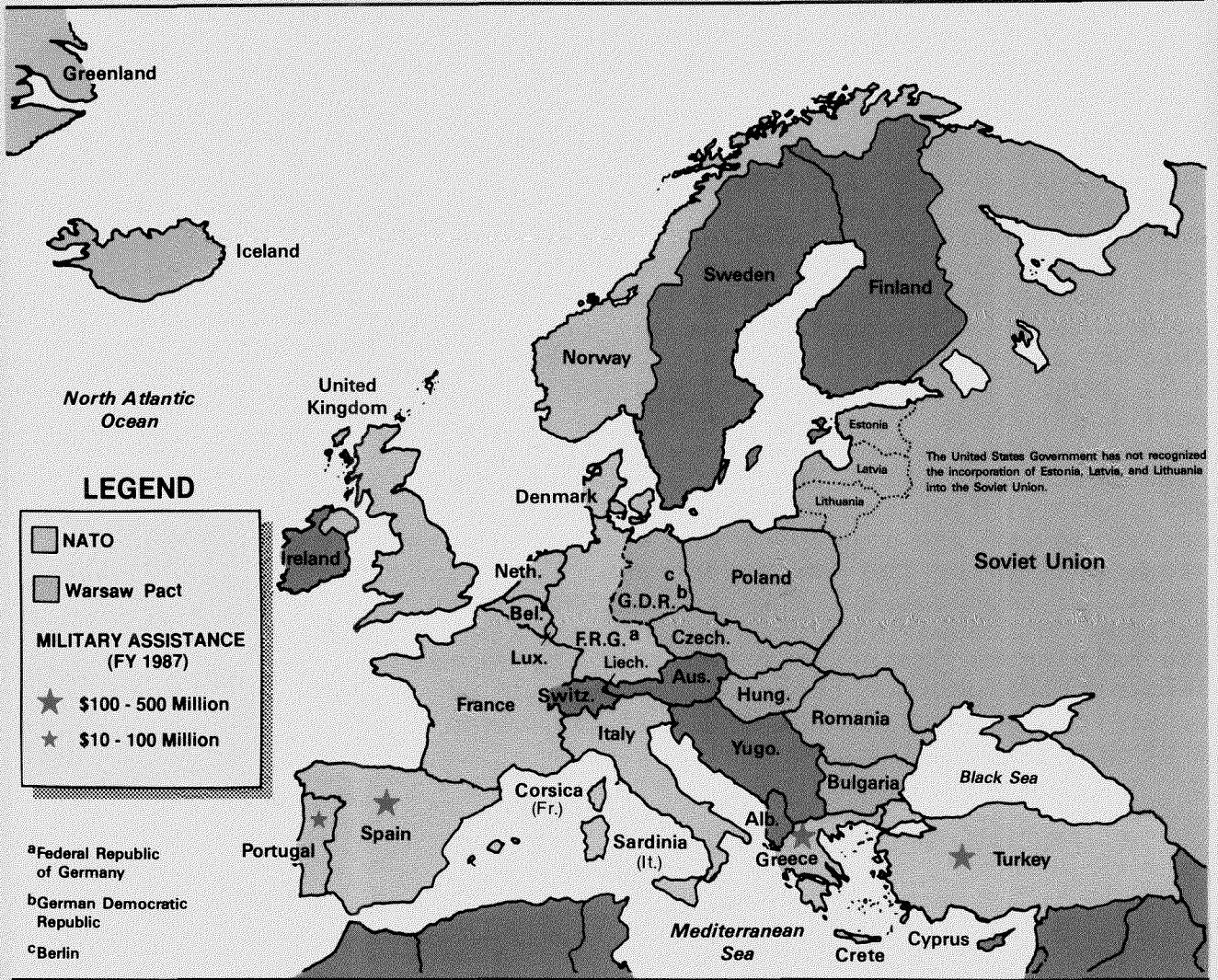
United States national security objectives necessitate a coalition strategy. We aim to deter aggression against, prevent coercion of, and if necessary defeat any attack upon ourselves, our allies, and our friends. Cooperation with our allies and friends -- particularly in the resource constrained environment we are faced with today -- is indispensable in achieving more specific U.S. security objectives, such as rebuffing Soviet expansionism; combatting low-intensity conflict; ensuring free transit and access to vital resources; sharing military technology among friends and denying it to adversaries; expanding support for the U.S. among other nations; and moderating the pace and direction of political change abroad. The natural, voluntary cohesiveness of our alliances, stemming from shared interests, is a major advantage which the United States enjoys over the Soviet Union; we can only benefit from increased emphasis on it. This chapter discusses how we are improving our collective security and, by extension, preserving the common defense. The first section, Regional Security, concerns our efforts in cooperating with friendly nations to preserve peace. In this way, our allies and friends are helping us protect our freedoms and interests just as we are helping them protect theirs. This mutual effort produces a synergistic effect in which the deterrent value of our combined strength exceeds the sum of its parts.

2. Regional Security

a. Europe / North Atlantic Treaty Organization

The North Atlantic Treaty Organization (NATO) was established in 1949 as a defensive alliance of independent nations, dedicated to preserving the freedom, common heritage, and well-being of its people. The Alliance's purpose is to preserve peace by possessing sufficient military strength and political cohesion to deter an attack on any member of the Alliance. As a measure of its success, 1988 marks the forty-third consecutive year of peace in Europe -- the longest period of uninterrupted peace on the Continent since the pre-Napoleonic era.

Europe



Boundary representation is not necessarily authoritative

(1) Interests, Challenges, and Risks

The defense of Europe is a vital interest of the United States. With its large population and its advanced technological and industrial base, Europe remains the most important area of the world to the United States outside of North America. Our economic systems are highly interdependent: nearly one-half of our foreign investment is in Europe, and Europe is the source of nearly two-thirds of the foreign investment in the United States.

The Soviet Union also is well aware of the immense strategic and economic importance of Western Europe. As a result, it has positioned both the majority and the most capable of its forces opposite Western Europe. Furthermore, the main objective of Soviet diplomatic and propaganda efforts is to drive wedges between us and our European allies. Fortunately, these efforts have been unsuccessful. In recent years, NATO has strengthened both its military capability and political cohesion. For example, despite a carefully orchestrated Soviet propaganda campaign, NATO moved steadily ahead in deploying intermediate-range nuclear forces (INF) while also pursuing negotiations with the U.S.S.R. for their elimination. Only when faced with allied solidarity was the Soviet Union willing to return to the INF negotiating table. With the agreement to eliminate all U.S. and Soviet INF missiles, Alliance cohesion will be essential as we seek to optimize our remaining nuclear and conventional forces for deterrence and defense in a post-INF era.

Despite the strength and vitality NATO has displayed when confronting the growing Warsaw Pact military threat, the Alliance is still challenged by both external and internal threats to its cohesion. In the face of a sophisticated Soviet "peace offensive," the Alliance must overcome the natural reluctance of its constituent democracies to devote increased resources to defense in times of peace.

(2) U.S. Military Capabilities

In keeping with its NATO commitment, the United States maintains sizeable forward-deployed and reinforcing conventional military forces. These forces and those of our allies, together with significant strategic and nonstrategic nuclear capabilities, are the indispensable elements of a credible NATO deterrent.

Although our warfighting capability, and that of our allies, has increased substantially over the past few years, the steady growth and increasing sophistication of the Soviet threat requires our sustained efforts to maintain an effective deterrent. Modernizing our force structure and improving its readiness and sustainability remain crucial to our ability to deter aggression.

Unfortunately, our troop strength in Europe remains limited by a congressionally imposed ceiling. No one is proposing indefinite increases in our European troop strength; indeed, reductions in Service end-strengths, reduced defense budget requests, and global requirements for U.S. forces all constrain our troop deployments. Nevertheless, within these constraints we need the flexibility to adjust European troop strengths as the situation requires. By

restricting our efforts to make essential force improvements, the ceiling also lowers Soviet incentives to negotiate conventional force reductions. Most important, the ceiling connotes to friends and adversaries alike that we have a political cap on our commitment to NATO that is not responsive to any change in the threat. The European troop strength ceiling, in short, is counterproductive to U.S. security interests.

(3) *Regional Cooperation*

(a) *Burdensharing*

Our NATO allies do more for NATO's defense than is commonly recognized. While our NATO allies account for less than 50 percent of total Alliance economic wealth, they maintain over three-and-one-half million personnel on active duty, compared to a little over two million for the United States. In a war, our NATO allies would provide roughly 60 percent of NATO's total ground combat power (as measured by division equivalent firepower), and over 50 percent of NATO's air combat power (as measured by numbers of Air Force tactical aircraft). Furthermore, Great Britain and West Germany make \$20 billion in real estate available free of charge for U.S. installations, and provide substantial territorial forces and host nation support to augment U.S. capabilities. Still, the United States does spend a larger proportion of its gross domestic product on defense than almost all of its allies, and certain NATO allies are doing less than their fair share by almost any measure. We are joining our other allies in pressing hard for all Alliance members to do more for defense. The credibility of our leadership, however, especially in the light of the urgent need to improve our conventional defenses, is highly dependent upon congressional support for our own badly needed defense improvements.

We also are seeking more balanced burdensharing in the Alliance's effort to contribute more security assistance to Greece, Turkey, and Portugal. Much remains to be done to address the shortfalls, and we are encouraging our other NATO allies to provide greater support for these three nations. I will address all of these burdensharing issues in greater detail in my 1988 Report to the Congress on Allied Contributions to the Common Defense.

(b) *NATO Defense Program*

Our NATO Defense Program, representing the U.S. contribution to the common defense, is designed to strengthen the NATO strategy of "Flexible Response." The INF Treaty preserves this strategy

intact, and NATO's military posture will continue to deter aggression. But sustaining this favorable condition depends upon NATO's ability to act decisively to continue both nuclear and conventional modernization. For our part, we must continue our programs to implement the 1985 NATO plan for Conventional Defense Improvements and the 1983 Montebello Decision on nuclear force modernization.

Conventional Defense Improvements-- In May 1985, Allied Defense Ministers approved a plan for conventional defense improvements (CDI). This plan identified critical deficiencies in conventional defenses and called for special efforts to overcome those deficiencies.

As part of CDI, NATO approved a group of high-priority force goals in 1986. Important progress already is being made in implementing these goals. For example, the Alliance plans to correct roughly half of all specific critical munition deficiencies within the current five-year planning period. Also contributing to NATO's CDI goals are its international armament cooperation efforts, described elsewhere in this chapter. Furthermore, in seeking ways to spend scarce resources more wisely, we have identified certain low-cost measures -- like terrain enhancement -- that promise a high payoff for strengthening deterrence and defense.

Nuclear Planning-- For the last 20 years, NATO's Nuclear Planning Group (NPG) has provided a forum for NATO defense ministers to discuss Alliance nuclear policy and posture. The NPG helped formulate NATO's December 1979 dual-track decision to deploy Pershing II and ground-launched cruise missiles (GLCMs) in Europe and to initiate U.S.-Soviet negotiations on INF. In its 1983 Montebello Decision the NPG decided to reduce NATO's nuclear stockpile in Europe by 1,400 warheads, while taking steps to make the remaining warheads and their delivery systems more responsive, survivable, and effective. These reductions, plus an earlier reduction of 1,000 warheads, have brought NATO's nuclear stockpile to its lowest level in 20 years. The Soviets have not responded in kind to our unilateral drawdown.

The NPG is analyzing the implications of the INF Treaty for NATO's nuclear force posture. Its analysis has thus far concluded that the necessary improvement measures stemming from the Montebello Decision -- i.e., modernization, correction of maldeployments, and improvements in survivability and command and control of theater nuclear forces in Europe -- have become all the more

important in order to sustain credible deterrence in the absence of INF missiles. The NPG is also considering what other adjustment measures may be necessary to restructure the remaining forces in light of the INF Treaty.

(c) *Host-Nation Support, Cooperative Logistics, and Infrastructure*

Under agreements with most of our allies, U.S. forces abroad obtain considerable support from NATO host nations in peace and, potentially, in the event of war. Peacetime arrangements include providing and supporting U.S. bases, operating joint-use installations, furnishing or operating prepositioning facilities, and allowing U.S. forces to use host nation training ranges. Wartime host-nation support generally covers a broader range of activities including biological-chemical decontamination, air base defense, transportation, and supply.

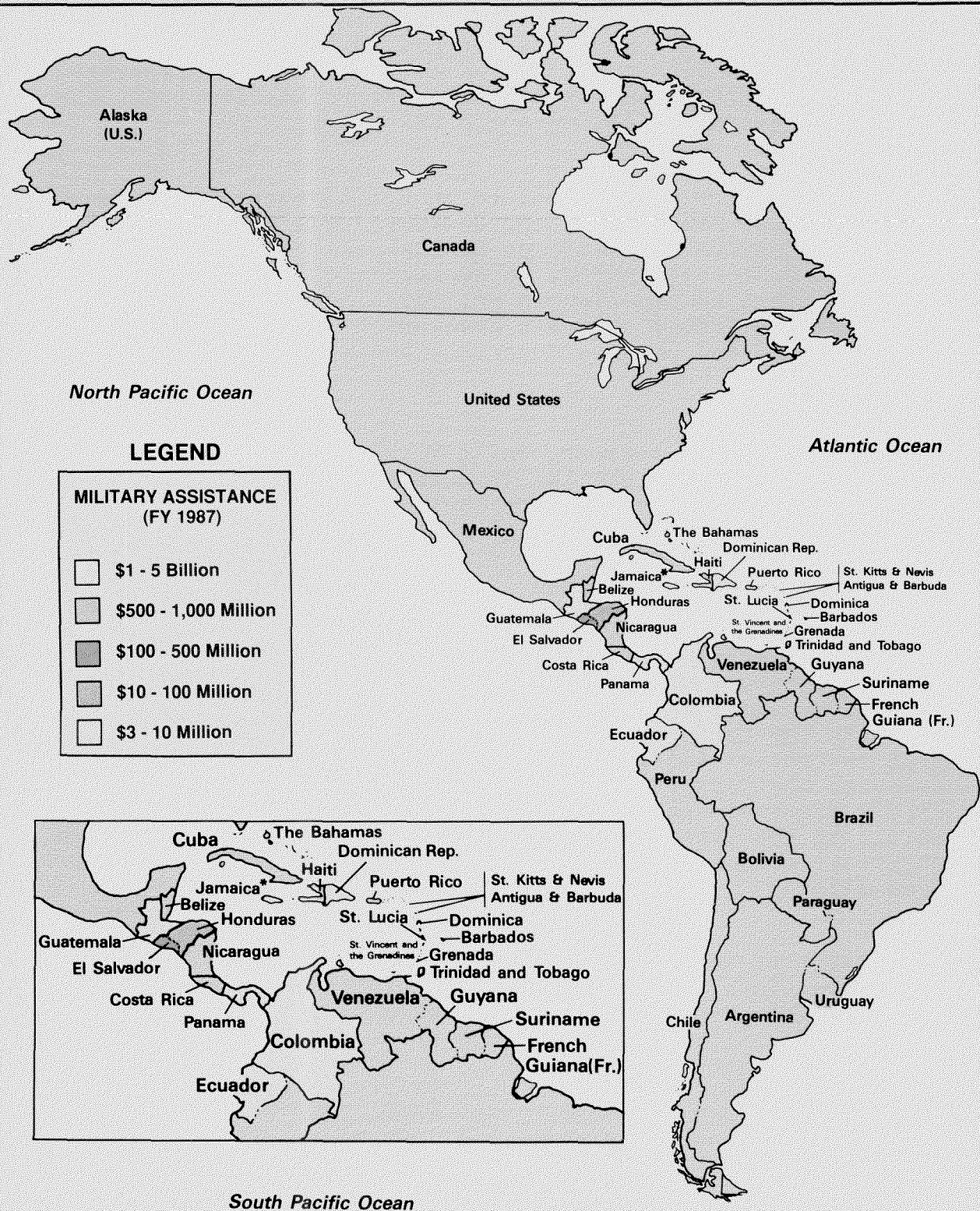
The United States participates in many cooperative logistics programs through the NATO Maintenance and Supply Agency. These include support for weapon systems, such as the Patriot, and a new program for the consolidated procurement of common NATO munitions. We also are working with the allies to establish reserve stocks of critical ammunition items for NATO's Southern Region.

NATO's Common Funded Infrastructure Program contributes greatly to the effectiveness of U.S. and NATO forces. Infrastructure support includes: essential operating facilities and protective shelters for U.S. reinforcing aircraft; facilities for storing fuel, ammunition, and theater reserve stocks; and a wide range of communications and electronics equipment for disseminating intelligence information, increasing warning time, and reducing reaction time in the event of an enemy attack. The program also provides training facilities and equipment for use by NATO forces during peacetime. Our allies contribute over 73 percent of total infrastructure program funding which, during the period 1985 through 1990, will amount to over \$11 billion at current exchange rates. Much of this contribution is for projects benefiting U.S. forces. Congressional limitations on our participation in this program, and proposals that threaten to reduce our participation unless our allies meet certain conditions, could result in the loss or delay of projects supporting our forces. The net effect would be reduced burdensharing and increased costs for the United States.

b. The Western Hemisphere

Chart I.D.2

The Western Hemisphere



Boundary representation is not necessarily authoritative

*Note: Jamaica received over \$3 million in U.S. military assistance in FY 1987

(1) Interests, Challenges, and Risks

In the post-World War II period the United States has not had to deploy major military resources abroad in the Western Hemisphere. We have instead concentrated our efforts in this region on developing stable societies with democratic institutions, the best long-term guarantee of peace and stability.

The United States has maintained an active security assistance program in Central America and the Caribbean rim designed to improve the defensive capabilities of the participating nations. The principal U.S. contribution to hemispheric security, however, has been through a combination of political and diplomatic initiatives designed to foster economic development, support dialogue and negotiations, and promote democracy and freedom throughout the region.

We have made much progress, but our gains are now threatened by Soviet encroachments into the Western Hemisphere aimed at exploiting hemispheric instability fueled by economic stagnation and an international debt crisis of staggering proportions. Having secured a stronghold in Cuba in the early 1960s, Soviet expansionism added another communist beachhead in Nicaragua in 1979, then was thwarted in Grenada in 1983. In Nicaragua, the Sandinista government, backed by massive Soviet-bloc and Cuban economic and military assistance, is seriously threatening both regional stability and U.S. national security interests. Eastern-bloc equipment and large numbers of Soviet and Cuban advisors have already made the Sandinista armed forces the largest and most powerful in Central America. Indeed, they are far larger than necessary to meet any reasonable threat to Nicaragua's national security. The rapid growth of the Sandinista armed forces is destabilizing the Central American military balance and threatening the fragile democratization process under way in other Central American nations.

The growth of Soviet influence in Managua also threatens U.S. security. In times of global crisis, Soviet and Cuban forces, their power projection capability enhanced by the use of Nicaraguan bases and military forces, could close the Panama Canal and interdict our Caribbean, Gulf port, and South Atlantic sea lanes. This would seriously impair both our ability to obtain vital natural resources and our resupply of NATO. Our response to this challenge entails continued support of the Nicaraguan Democratic Resistance Forces to pressure the Sandinista regime to restore democracy and freedom to the Nicaraguan people. Military pressure by the resistance forces was primarily responsible for bringing the Sandinistas to the negotiating table with the other Central American nations. Our continued moral and financial backing of

the Nicaraguan freedom fighters is necessary to ensure Sandinista compliance with the Guatemala Accord. Today, Soviet-bloc aid to the Nicaraguan communists is more than all U.S. aid to all of Central America, and ten times more than U.S. aid to the Nicaraguan resistance.

The United States must also support South American efforts to combat low-intensity conflict, including communist-supported insurgencies, drug trafficking, and terrorism. Our long-standing friendly relations with South American nations have been jeopardized by severe legislative restrictions on the military assistance we can provide to South American military and police forces. These restrictions are even more important in light of recent Soviet economic initiatives that could lead to improved bilateral politico-military relations with several South American countries.

To the north, the threat to the United States and Canada from Soviet strategic forces has been steadily increasing. Maintaining our security against this threat will require our continuing the United States-Canada combined military command of NORAD, plus prudent surveillance, air defense modernization, and progressive research in advanced technologies for aerospace defense.

(2) Military Capabilities

The Commander in Chief of the United States Southern Command (USCINCSO) is responsible for the more than 10,000 U.S. military personnel stationed in 19 of the 20 countries of Central and South America. Most of these personnel are based in Panama, location of the headquarters for the Southern Command. The command provides for the defense of the Panama Canal in conjunction with the Panamanian Defense Force; monitors regional military security assistance programs; is responsible for U.S. military operations on the Central and South American land mass; and supports counter-drug operations in the region. The Commander in Chief of the U.S. Atlantic Command (USCINCLANT), headquartered in Norfolk, Virginia, is responsible for the Caribbean and waters adjacent to Central and South America. U.S. Forces Caribbean in Key West, Florida, is a subunified command under USCINCLANT. It is responsible for coordinating all joint Service matters in the Caribbean, including security assistance and military support to narcotics control. There are over 4,500 military personnel stationed in the Caribbean islands, most of them at the U.S. naval bases in Guantanamo Bay, Cuba, and Roosevelt Roads, Puerto Rico.

The Commander in Chief of the North American Aerospace Defense Command (CINCNORAD), headquartered in Colorado Springs, Colorado, is responsible for aerospace defense and surveillance of the North American continent. Some 800 personnel -- from both the United

States and Canada -- are assigned to this combined military command.

Forces Command (FORSCOM) is a specified command responsible for the land defense of the continental United States, for cooperating with Canadian forces in the combined land defense of the United States and Canada, and for maintaining forces ready to reinforce other commands worldwide. Headquartered at Fort McPherson, Georgia, FORSCOM comprises over one million Active Component, Army Reserve, and Army National Guard personnel at installations throughout the United States.

(3) *Regional Cooperation*

Military cooperation with friendly nations of the region is a vital part of the United States' hemispheric strategy to promote peace and stability. Annually, USSOUTHCOM conducts military training exercises and deployments that provide incidental benefits to regional allies militarily, politically, and economically. For example, FUERTES CAMINOS engineering exercises held by regular U.S. Army, Reserve, and National Guard units, involve the building of roads, bridges, and other facilities in the region, thus strengthening local government infrastructures and accelerating national economic growth. Humanitarian and civic action missions, such as those conducted during the recent earthquakes in Ecuador and El Salvador, exemplify military actions constantly being undertaken by USSOUTHCOM in support of U.S. regional strategy.

USCINCLANT likewise conducts joint and combined exercises in the Caribbean, including UNITAS, conducted annually; SOLID SHIELD and OCEAN VENTURE, which alternate on an annual basis; and UPWARD KEY and TRADEWINDS, which are conducted more frequently on a smaller scale. These exercises include engineer training that benefits regional governments as well as U.S. forces through the construction and repair of schools and other public facilities. Large-scale military support -- for example, surveillance, mobility, and communications support -- has also been provided to federal narcotics interdiction efforts in the Caribbean to stem the flow of illegal drug traffic into the United States across our southern borders.

In North America itself, we continue the successful coordination of our defense efforts with Canada -- with whom we share the world's longest unfortified border -- under the auspices of the Canada-U.S. Basic Security Plan. For the combined land defense of both the United States and Canada, Forces Command coordinates planning with the Canadian Forces Mobile Command.

c. East Asia and the Pacific

(1) Interests, Challenges, and Risks

Our security interests in East Asia and the Pacific -- political, economic, and military -- are extensive. This economically vital region has surpassed Europe as the United States' largest trading partner and the margin of difference grows each year. The region boasts, in Japan, one of the world's leading democracies. In other East Asian countries, the emergence and political maturation of democratic institutions has focused attention on the region as an area of political development and rapid economic growth.

Challenges to the region's economic and political successes spring from many quarters, but the primary threat to sustained peace and stability remains the expansion of Soviet military power and influence in the area. Modernization of Soviet air and naval forces and the concurrent augmentation of Soviet power-projection capabilities give evidence to the true objective of Soviet policy in the region: gaining influence through the threat of armed force rather than through diplomacy and trade.

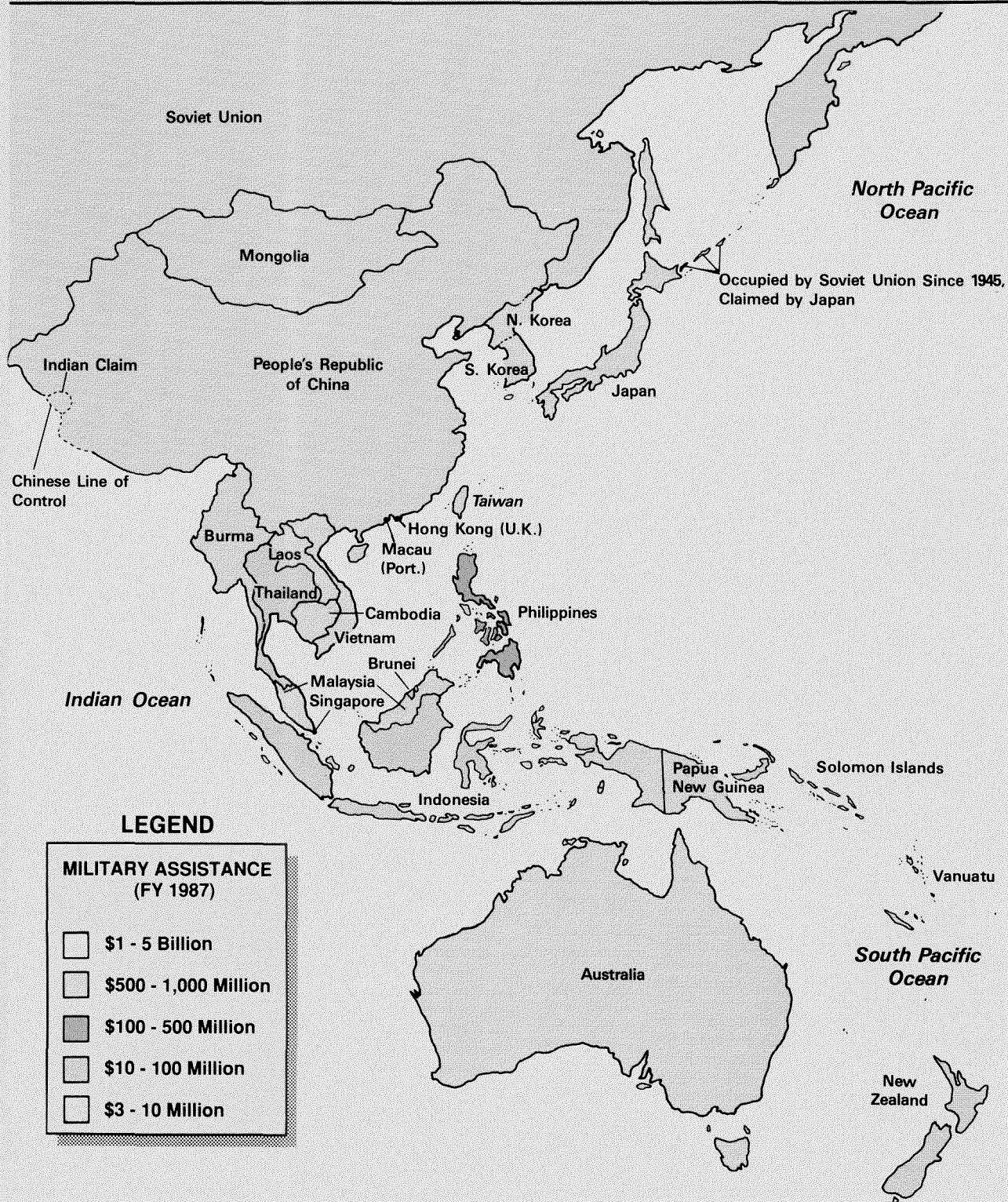
Other challenges to U.S. security interests stem from regional threats to our friends and allies. North Korea continues threatening the Republic of Korea (ROK) with military forces far exceeding those required for self-defense. Despite growing ROK military capabilities and the presence of U.S. troops, North Korea remains capable of launching a massive attack against the ROK with minimal warning. There is also the danger that the North could undertake terrorist operations aimed at subverting either the political processes at work in the South, or the 1988 Olympics.

The Cambodian people's suffering under Vietnamese military occupation continues unabated into its ninth year. At the same time, our ally, Thailand, is threatened by over 135,000 Vietnamese troops in Cambodia. Helping Thailand meet regional threats and defend its borders against Vietnamese aggression remains a primary objective of U.S. alliance strategy for East Asia and the Pacific.

The Philippines has undergone severe turbulence in the two years since the restoration of democratic institutions following the February 1986 revolution. Political divisions among democratic forces and the continuing threat of a virulent communist insurgency pose serious challenges to the future of Philippine democracy. The United States unequivocally supports the elected

Chart I.D.3

East Asia and the Pacific



Boundary representation is not necessarily authoritative

civilian government of the Philippines and our defense relationship rests on that government's continued success.

The suspension of our Australia-New Zealand-United States (ANZUS) security obligations to New Zealand, which resulted from the prohibition of U.S. naval ship visits to that country, presents a challenge to regional security in the South Pacific. Both the United States and Australia have reaffirmed that their mutual rights and obligations under the ANZUS Treaty remain in place and provide the framework for a resumption of trilateral cooperation should that become feasible.

(2) *U.S. Military Capabilities*

Reflecting our long-standing concern for the region's security, we have active mutual security agreements with Japan, the Republic of Korea, the Philippines, Thailand, and Australia and have established non-treaty security relationships with several others countries as well. Yet we cannot adequately defend our interests in East Asia and the Pacific with U.S.-based forces alone. The proximity of Soviet forces, and those of Soviet surrogates, to our Pacific allies and interests imposes severe demands on the timeliness of our response. Because our interests, concerns, and values are shared by many nations of the region, and because we must be capable of deterring aggression and responding quickly in the event deterrence fails, we maintain ground, naval, and air forces in Japan and Korea, and naval and air forces in the Philippines, plus naval carrier battle groups and Marine amphibious forces in the Western Pacific.

The U.S. Commander in Chief, Pacific (USCINCPAC), with headquarters in Hawaii and forces spread throughout the region, has responsibility for U.S. military operations in an area covering over 50 percent of the earth's surface.

(3) *Regional Cooperation and Burdensharing*

Military cooperation with many countries in the Pacific is crucial to the United States' strategy of deterrence and forward defense. The broad support these countries provide us -- including access to bases, host-nation support, and participation in combined exercises -- significantly enhances our capabilities and promotes regional stability. Several countries are particularly important in this respect:

Japan -- Our security relationship with Japan is the foundation of U.S. defense policy in East Asia and the Pacific. The U.S. nuclear umbrella and defensive shield -- combined with Japan's commitment to defend its territory, air space, and vital sea lines of communication out to 1,000 miles -- make the prospect of Pacific operations inherently risky and complicated for the Soviets. In 1987 the government of Japan determined that its national interests required a flexible, non-quantitative defense spending criterion, still premised on self-defense roles, in lieu of its former, arbitrary one-percent-of-the-gross-national-product defense spending cap. Achieving a greater self-defense capability will require significantly more effort by Japan in the 1990s. We encourage the Japanese government to pursue these efforts. At the same time, we recognize the substantial support Japan has given to U.S. forces in the region. Tokyo already provides us with the most financially generous host-nation support (HNS) agreement of any nation (\$2.5 billion in 1988 alone), and has voluntarily agreed to assume more than \$100 million annually in additional U.S. labor costs through 1991.

China -- Our developing defense relationship with China is based on common security interests. A secure, modernizing China can be a force for peace and stability in East Asia and the world. Recognizing that China is a friend, the United States has sought to play a positive role in China's defense modernization. We will continue to pursue high-level dialogues, functional military exchanges, and military technological cooperation in areas that are of mutual interest to China and the United States. In doing so, we also will take into account the interests of other friends and allies in the region.

Republic of Korea -- The United States and the Republic of Korea (ROK) are working closely together to ensure that our collective security remains strong. We are sharing intelligence information and conducting combined exercises to ensure that we are ready for any type of aggression.

Thailand -- Thailand's independence, stability, and territorial integrity are crucial to peace and security in Southeast Asia. As a long-time friend and treaty ally, the United States has supported Thailand with a broad range of programs to modernize and improve the Royal Thai Armed Forces, to include participating in combined exercises, providing military equipment and training under the security assistance program, and concluding a war reserve stockpile agreement. We are also continuing to furnish modest aid to the non-communist resistance forces seeking to liberate Cambodia from Vietnamese domination.

The Philippines -- Our security relationship with the Philippines predates both NATO and our regional alliances. The contemporary basis for our close military relations is found in our Mutual Defense Treaty of 1951 and Military Bases Agreement of 1947. Our alliance is grounded in a common recognition that the security of the Philippines, which sits astride vital sea lanes, strongly influences peace and stability in the entire East Asia and Pacific region. The presence of U.S. forces at Clark Air Base and Subic Bay Naval Base constitutes our military contribution toward preserving our common interests of peace and security. Our security assistance program -- an FY 1988 request of \$110 million in military grant aid and \$2.6 million in military training grants -- is designed to assist the Philippine armed forces in meeting their alliance responsibilities by equipping and training them to protect the nation, and by enhancing their military professionalism. Our current efforts are focused on providing the equipment needed by the Philippine armed forces to combat the current communist insurgency that threatens the democratic gains of the February 1986 revolution.

Australia and New Zealand -- The regional stability provided by the ANZUS Treaty now rests on the close security cooperation existing between Australia and the United States. In 1987 the enactment of legislation transformed into law the New Zealand government's policy preventing normal patterns of alliance cooperation. The United States has confirmed that our ANZUS security obligations to New Zealand remain suspended pending adequate corrective measures. The strength of the alliance relationship between Australia and the United States is reflected in our continuing active defense cooperation.

d. The Near East, South Asia, and North Africa

(1) Interests, Challenges, and Risks

The United States has critical security interests in these regions that have spawned the following objectives: deterring Soviet aggression; denying the Soviet access or influence in the region that might compromise the free world's access to energy resources; assuring the stability and security of friendly states, especially those strategically positioned relative to oil resources; inhibiting escalation or the spread of armed conflicts; and reaching a just, peaceful, and enduring settlement to the Arab-Israeli conflict.

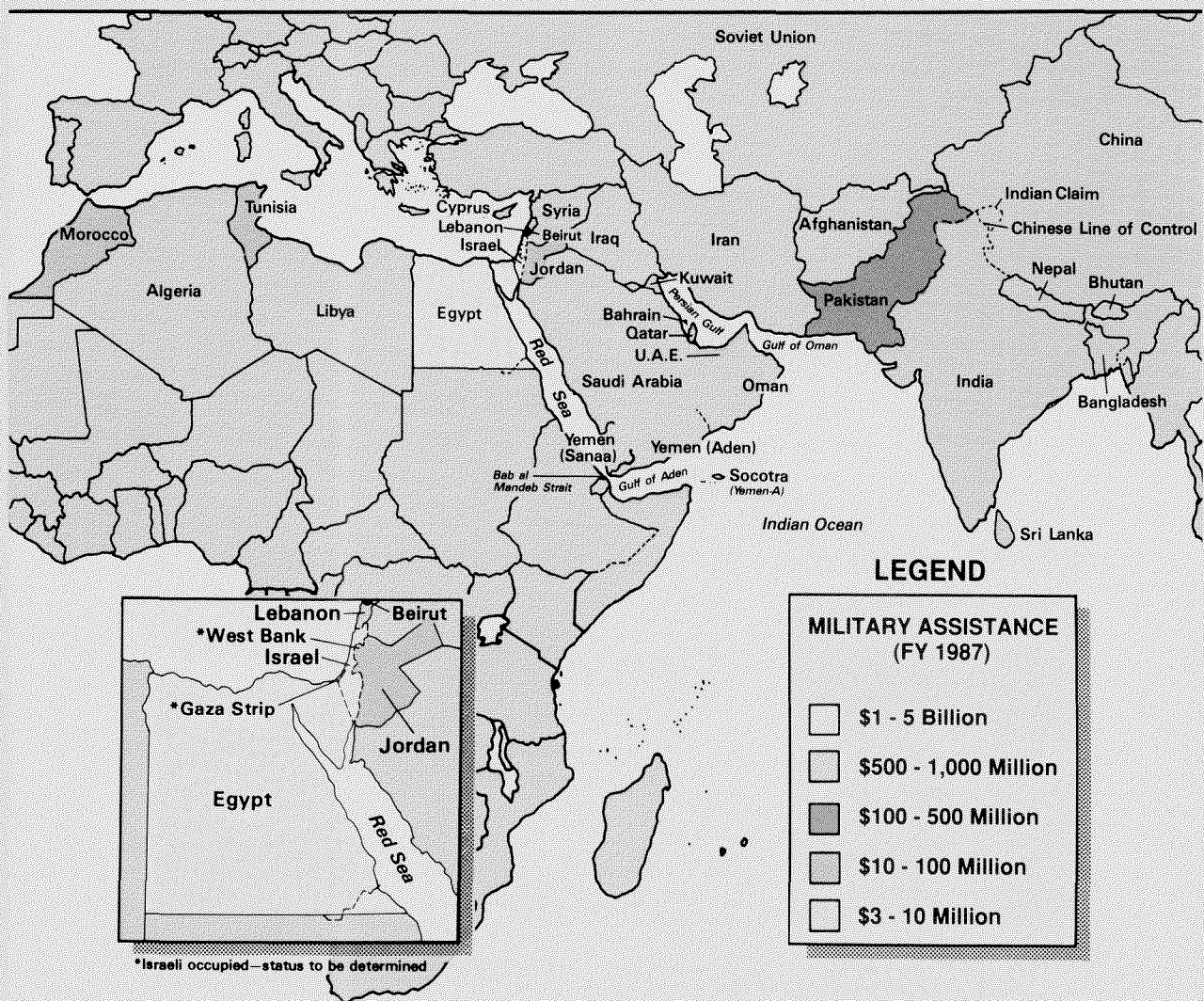
The United States is facing serious challenges to its interests throughout these regions. Armed conflict in the Western Sahara, Libyan aggression in Chad, the Iran-Iraq war, Iranian

disregard for freedom of navigation in the international waters of the Persian Gulf, the continued Soviet occupation of Afghanistan, and border clashes between South Yemen and Oman are jeopardizing political and economic stability.

The most immediate threat to U.S. interests, however, remains Iran's intransigence in ending its war with Iraq, its determination to export terrorism, and its efforts to spread Islamic fundamentalism through force or intimidation in the Persian Gulf states and elsewhere.

Chart I.D.4

The Near East, South Asia, and North Africa



Boundary representation is not necessarily authoritative

To counter this threat and safeguard our interests, President Reagan has approved a three-pronged strategy. One element involves vigorous U.S. diplomatic efforts to halt arms sales to Iran and end the Iran-Iraq war, as well as to reduce other regional tensions. The second element involves our support for the moderate Arab states, including escorting U.S.-flag vessels in the Persian Gulf. The third element involves a halting of all U.S. imports from Iran.

There are risks involved in this strategy, but we remain convinced that the risks of alternative courses of action are even greater. There is no risk-free way to protect our vital interests. Our best course is to minimize and manage those risks and to chart a steady course aimed at ending the war and communicating to our friends -- and our adversaries -- our resolve.

(2) Military Capabilities

Geographic military responsibility for the region is shared by three commanders in chief: the European Command, responsible for most Mediterranean littoral countries; Central Command, responsible for Southwest Asia; and Pacific Command, responsible for the South Asian countries. Following our decision to reflag 11 Kuwaiti tankers and provide them protection in the Persian Gulf, we created the Joint Task Force Middle East (JTFME) to provide essential command and control for our increased naval presence, which includes the U.S. Middle East Force (MIDEASTFOR) that has been stationed in the Persian Gulf for nearly 40 years.

Adequate levels of general purpose forces are available in the event of a regional crisis. Clearly, however, a timely and effective U.S. response to military threats will hinge on non-treaty relationships with friendly states for rapid force deployment and resupply, access to local facilities and support, and assistance from local military forces.

(3) Regional Cooperation

North Africa -- The United States has longstanding security relationships with Morocco and Tunisia. We maintain close contact with both countries as we seek to strengthen their military capabilities through equipment purchases and training, and as we negotiate for expanding access and transit rights for our forces during crises.

Near East -- Our ability to respond to crises in the Eastern Mediterranean and Southwest Asia has increased during the past year, in part through our extensive security assistance relationships with Egypt and Israel. We are expanding bilateral joint military exercises with each country, negotiating prepositioning arrangements, and revitalizing defense industrial cooperation. Small numbers of U.S. personnel are also contributing directly to preserving peace in the Near East by serving as members of the Multinational Force and Observers in the Sinai, and with United Nations Truce Supervision Organization contingents in Egypt, Lebanon, and Syria.

Persian Gulf -- Our protection of U.S.-flag vessels to assure freedom of navigation in the Persian Gulf requires extensive host nation support. For example, Saudi Arabia has supported deployment of U.S. AWACS aircraft since 1980 and has provided fighter support for our missions in Saudi airspace. During the Stark incident, the Saudis scrambled F-15s to protect AWACS aircraft and their oil facilities, assisted in our search and rescue efforts, and readied their military hospital to receive our casualties. Kuwait has offered free fuel, as well as maintenance support, for MIDEASTFOR ships escorting reflagged tankers. Bahrain has leased us facilities for an administrative support unit, and provided extensive support to our naval presence in the Gulf (MIDEASTFOR), principally through port visits, maintenance facilities, and commercial refueling. Oman, the only Middle East country with which we have a formal access agreement, conducts combined exercises with U.S. forces and provides support for our Indian Ocean naval forces.

South Asia -- Pakistan continues playing a key role in our efforts to oppose Soviet aggression in Afghanistan. We are seeking to expand our strong security assistance and defense industrial relationship with Pakistan. Although we have very serious concerns over the prospect of nuclear proliferation, we believe that our assistance program provides the best basis for encouraging Pakistani restraint in the nuclear area. We have increased our security cooperation with India, particularly in the area of defense industrial production assistance. We are examining other potential areas for technological cooperation and training which we hope will expand our military relationship with this key country.

e. Sub-Saharan Africa

(1) Interests, Challenges, and Risks

Our objectives in sub-Saharan Africa remain constant: continued free world access to the continent's vast mineral wealth; a rollback of Soviet influence; improvement in our own relationships; a reduction in regional violence; the encouragement of economic, social, and political development; and occasional military access to facilities in the event of regional or Southwest Asia contingencies. Real economic and political growth in Africa is presently hostage to the violence prevalent in the continent, much of which is spawned or encouraged by the Soviet bloc and Libya. In Angola, Soviet advisors, some 36,000 Cubans, and massive infusions of Soviet weaponry prop up a regime which again this year proved unable to defeat UNITA's freedom fighters. In Mozambique and Ethiopia, other civil wars rage, with the governments reluctant to sever their weapons pipeline from the Soviet Union or to negotiate with their opponents. Libya continues its adventurism throughout the continent and, though soundly thrashed by Chadian forces last year, doubtless will attempt to hold the Chadian territory it still illegally occupies and regain more of its southern neighbor's territory. Civil war also rages on in Sudan with implications for U.S. regional interests.

In addition to this seemingly endemic violence, economic devastation brought on by ill-conceived and poorly executed governmental policies is widespread, and African leaders, recognizing this, are moving toward market economies. Natural and manmade catastrophes -- particularly drought, deforestation, and insect infestation -- and a burgeoning AIDS pandemic add to the gravity of the situation. We believe strongly that the region's problems must be addressed primarily by political and economic means, and that military resources should be constrained and directed toward bringing a reduction in violence. Only in a climate of relative peace and renewed economic progress are our national objectives in Africa likely to be attained.

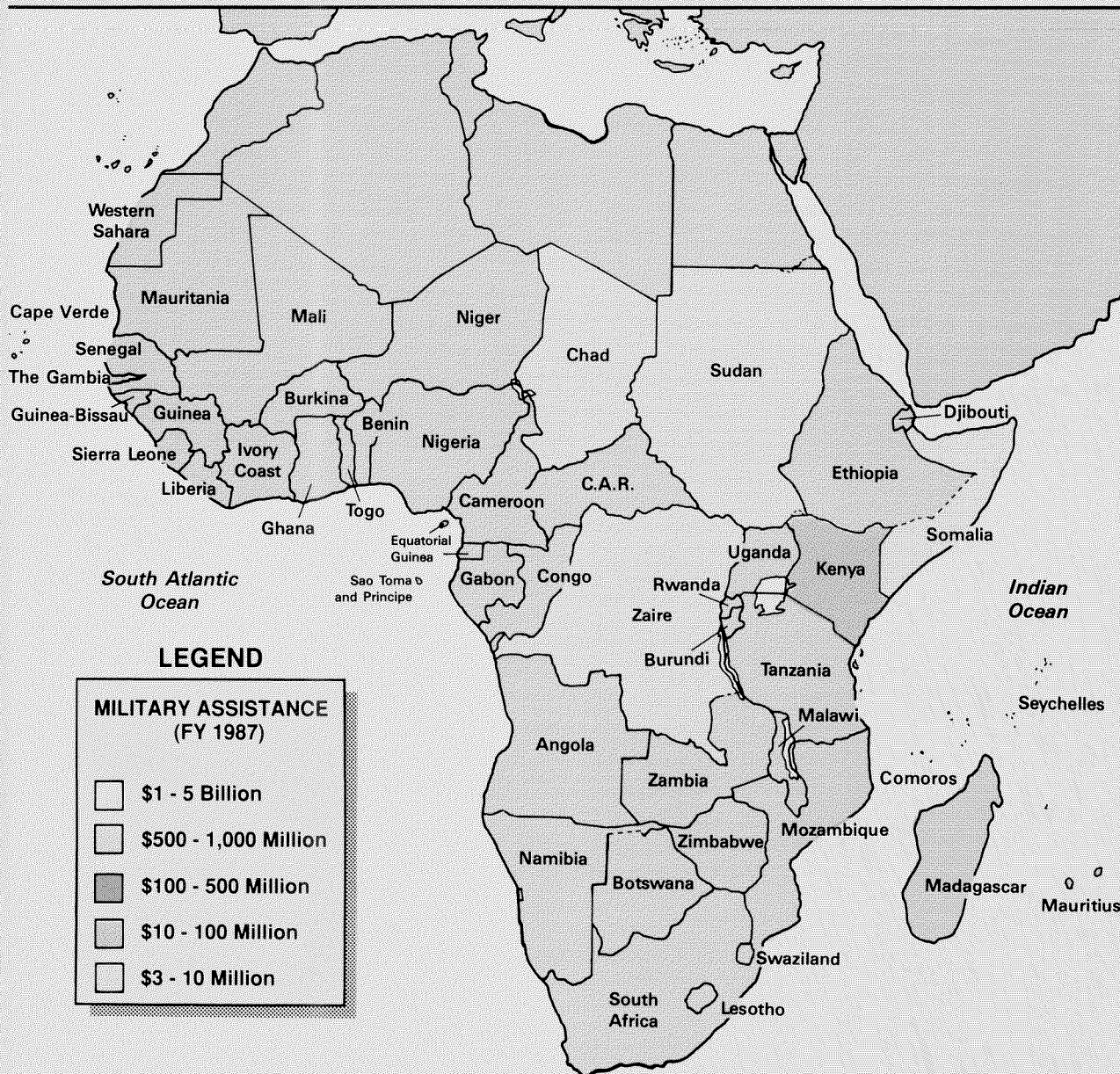
(2) U.S. Military Capabilities

U.S. military responsibilities for the sub-continent reside in three unified commands: our Central Command is responsible for the strategic Horn of Africa (Kenya, Somalia, Sudan, Djibouti, and Ethiopia); our European Command for the bulk of the continent; and our Pacific Command for the four Southwest Indian Ocean island nations of Madagascar, Mauritius, Seychelles, and Comoros. Assigned U.S. military presence in Africa is minuscule, numbering

fewer than 450 servicemen at any one time -- more than half of whom are Marine embassy guards, with the remainder comprised of attaches and security assistance personnel. No U.S. combat forces are stationed in Africa, nor do we have any naval or air bases there. Our forces, however, do occasionally conduct exercises in Africa, and make visits as operational requirements dictate.

Chart I.D.5

Sub-Saharan Africa



Boundary representation is not necessarily authoritative

(3) *Regional Cooperation*

Africa's strategic location and excellent -- though widely dispersed -- harbors and airfields make it of significant importance to U.S. operations in Southwest Asia and the Indian Ocean. A number of East African states such as Kenya, Somalia, and Djibouti, have allowed us to use facilities in their countries to support operations in the region. We have also used facilities in West and Central Africa, as was recently demonstrated when this type of support was provided to facilitate the flow of U.S. logistical support to Chad. We appreciate this cooperation, and will continue supporting our friends in Africa to deter or, if necessary, to respond to aggression, as we have in Chad. Our principal tool in this endeavor is security assistance, which though very modest in scale is carefully tailored to local needs and capabilities, and highly cost effective. To avoid duplication of effort and to build on the extensive experience of our European allies, we are working closely with countries such as the United Kingdom, France, Germany, and Italy in carrying out security assistance and other related programs in Africa.

f. Humanitarian Assistance

Our humanitarian assistance projects promote U.S. security needs abroad while improving the welfare of indigenous populations. Since the DoD Task Force Report on Humanitarian Assistance in 1984, the Congress has legislated new authorities for more effective DoD programs of this type. Current forms of assistance include: providing rural medical, dental, and veterinary care; constructing and repairing rudimentary surface transportation systems, sanitation facilities, and other public works; transporting private sector humanitarian cargo; providing excess DoD property for humanitarian purposes; providing airlift, personnel, and materiel for U.S. disaster relief efforts upon request from the Agency for International Development (AID); and training local forces to improve their professionalism, leadership, and democratic civil-military relations. These efforts involve U.S. active duty, Reserve, and National Guard personnel in projects that improve their own skills and promote U.S. interests while enhancing the stability and well-being of the host country and its population.

3. Security Assistance

a. The Role of Security Assistance in National Strategy

(1) Objectives

Security assistance is a fundamental component of U.S. defense and foreign policy. By contributing to a balanced country package of military and economic aid, security assistance supports independent political development; promotes stability; encourages economic development and reform; contributes to base and facility access needed to bolster our own force projection capabilities; and promotes the interoperability of U.S. and allied forces to strengthen our collective security framework. Security assistance is also our principal instrument for combatting low-intensity conflict (LIC). In summary, security assistance plays a significant role in preserving our own security through collective efforts.

(2) Components of Security Assistance

Our security assistance program comprises five major components, four military and one economic:

- Foreign Military Sales Credit Financing (FMSCR) provides direct credits to countries, either at market or concessional interest rates, for the purchase of U.S. equipment or services;
- Our Military Assistance Program (MAP) provides funds on a grant basis to allies and friends to procure U.S. defense articles and services to strengthen their defense capabilities;
- The International Military Education and Training Program (IMET) is a low-cost, grant-aid foreign policy instrument through which we provide or support education and training for foreign military personnel in the United States;
- Peacekeeping Operations (PKO) involve our military forces in peacekeeping roles in several unstable areas around the world; and

- The Economic Support Fund (ESF) offers economic assistance on a grant or loan basis to developing countries. The ESF complements other forms of economic assistance by helping recipient countries avoid economic and political instabilities that can threaten their security. It cannot be used for military or paramilitary purposes. Although ESF is not implemented by the Department of Defense, it is part of this country's overall security assistance effort and is an essential complement to our military assistance programs.

Unlike U.S. defense programs, security assistance is not funded in our two-year defense budget. Instead, it is funded in those foreign assistance monies appropriated to the President. Thus, it continues operating on an annual budget cycle.

b. Trends

(1) Funding Reductions

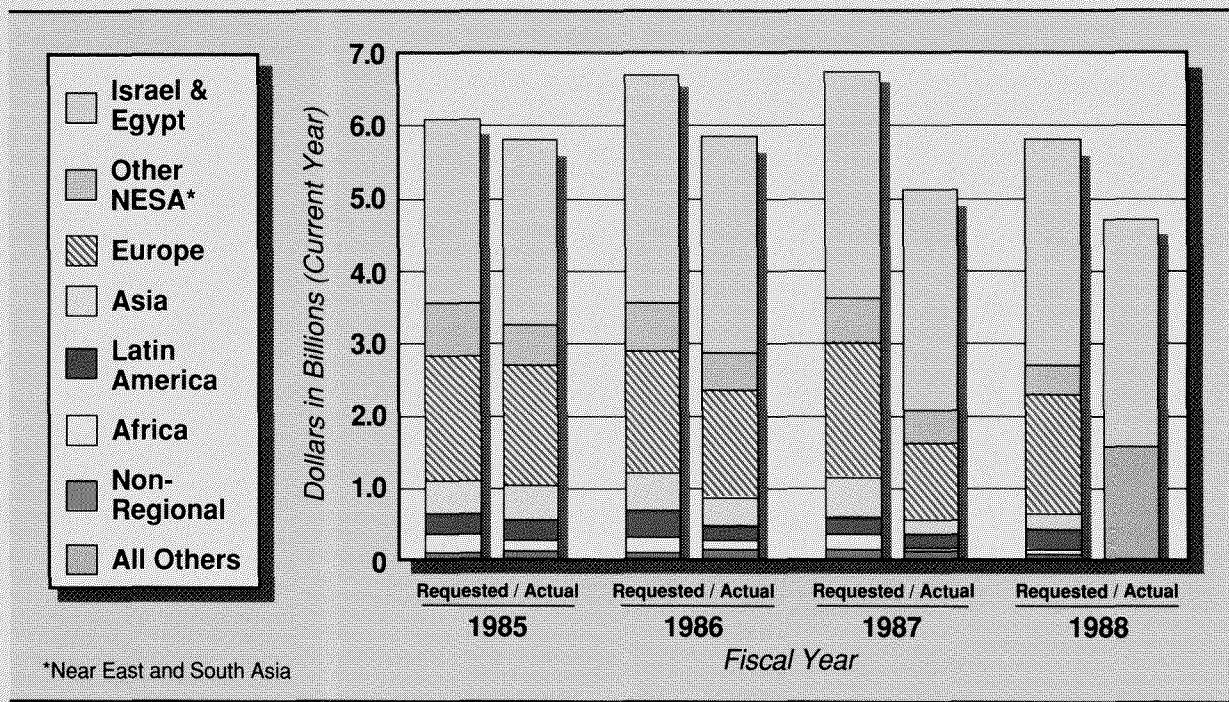
Security assistance, particularly the military segment, is only a small fraction of the total resource effort supporting U.S. foreign and defense policies. Yet, despite its proven importance and cost-effectiveness, the Congress has severely curtailed the funding allocated for security assistance. Using FY 1985 as a baseline, the federal budget increased by almost 2 percent by FY 1987. Foreign aid, however, of which security assistance is a component, was reduced by 29 percent in FY 1986 and by another 17 percent in FY 1987.

Furthermore, in FY 1986, the Congress cut the President's request for security assistance funding by more than 20 percent, after which the sequestration required by Gramm-Rudman-Hollings reduced the appropriation by another 4.3 percent. Many strategically important countries' funds were reduced, with cuts ranging from 4.4 to 83 percent. For FY 1987, security assistance was reduced by 21 percent from the President's request and 10.6 percent below FY 1986 actual levels. The military element was 26 percent below our requested level and some 14 percent below FY 1986 actual levels. Aggravating these cuts, the Congress earmarked roughly 85 percent of all military assistance funds for just five countries -- Egypt, Greece, Israel, Pakistan, and Turkey (see Chart I.D.6), thereby causing drastic reductions for many of the remaining countries, with some receiving no funding at all. Fortunately, we did receive a \$364 million supplemental appropriation, although it was 52 percent less than requested. Even

with the supplemental, FY 1987 funding was still far below FY 1986 levels.

Chart I.D.6

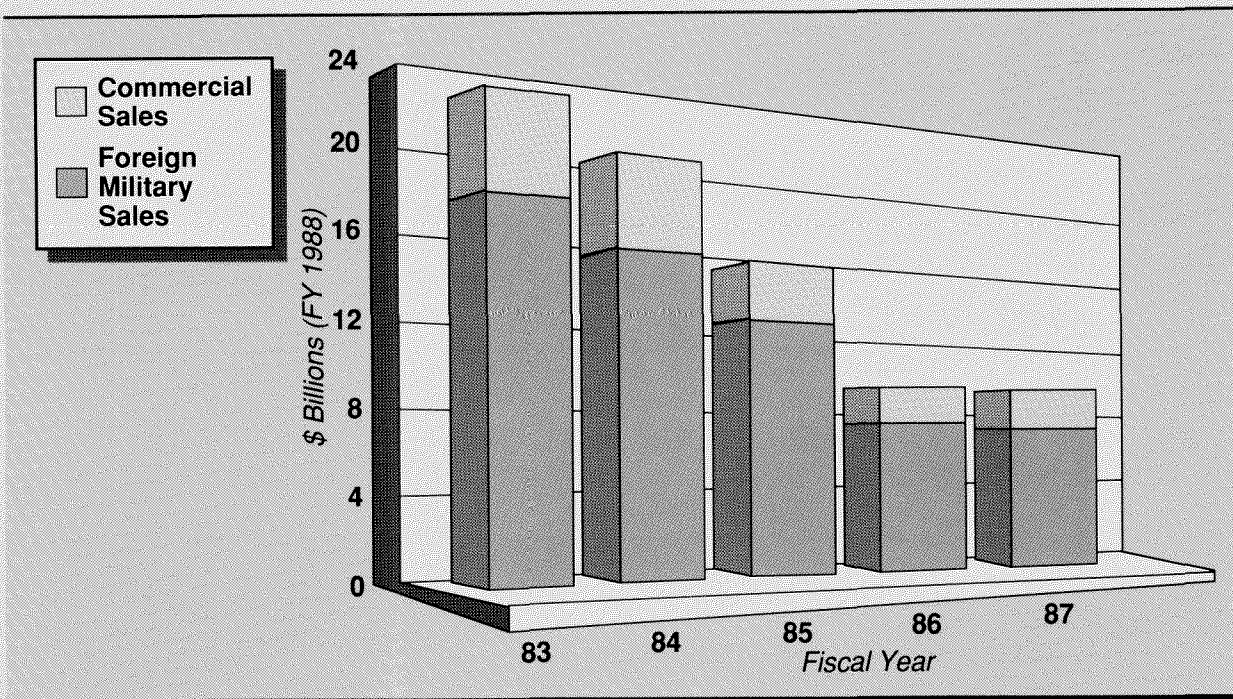
Military Assistance: Budget and Funding Trends



Similarly, the FY 1988 military assistance situation is bleak. Our overall funding request would only have returned us to roughly FY 1986 levels. The actual funding levels, however, are more than 5 percent below FY 1987 levels, with over 90 percent of our total FMS and MAP funds earmarked. This degree of inflexibility may well cripple our efforts to support U.S. foreign policy and preserve national security. To ameliorate the damage, in FY 1989 we intend to request an all grant security assistance program, to include forgiven FMSCR for all credit recipients.

Chart I.D.7

U.S. Defense Transfers: FY 1983 Through FY 1987



These trends in U.S. military assistance funding are particularly troubling in light of the emerging pattern in our defense transfers. Over the last five years, arms sales have steadily declined due, in part, to our failure to meet the legitimate requests of friends and allies for major equipment. Chart I.D.7 shows that large sales agreements, which represent significant force improvement purchases by our friends and allies, have virtually disappeared, leaving primarily our routine equipment and support sales agreements to fill the gap.

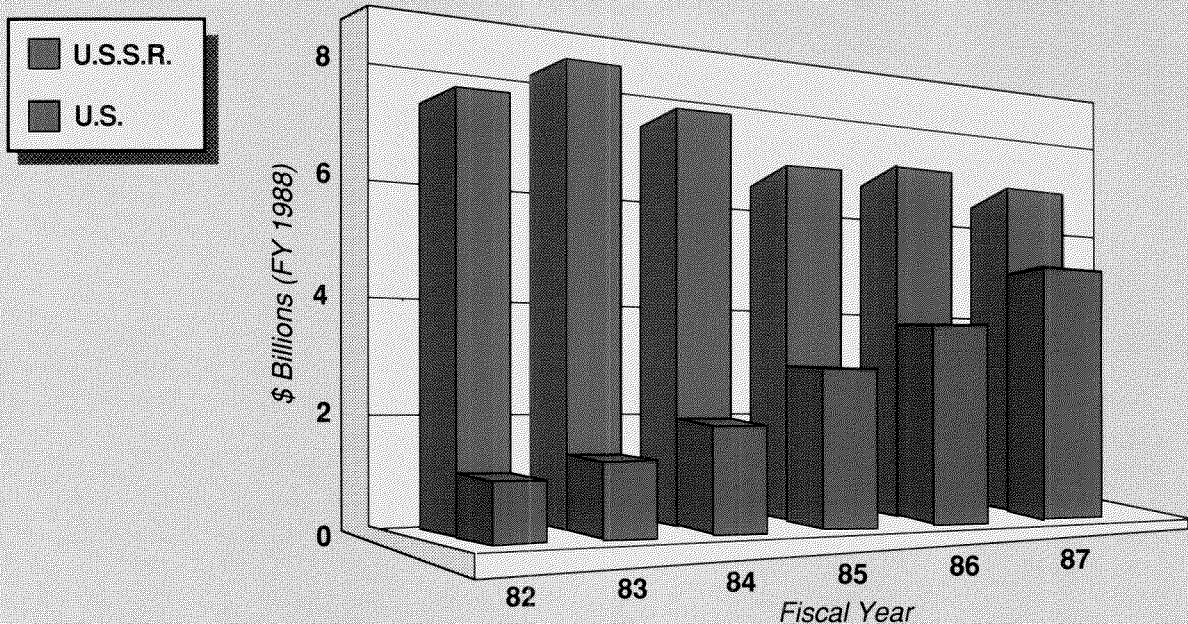
By denying these requests, we risk eroding foreign governments' incentives to cooperate with us, and we risk losing access and influence as countries turn to others, including the Soviet Union, for equipment and support. Indeed, history is replete with examples of Soviet willingness to exploit such opportunities.

(2) A Comparison: The Soviet Effort

The Soviets have demonstrated a great appreciation for the ability of arms transfers to serve as a lever in gaining political influence. Moscow continues providing large amounts of military equipment and materiel to strategically placed lesser developed countries (LDCs) on an outright grant basis (see Chart I.D.8). During the last five years over 40 percent, or an average \$6 or \$7 billion per year, of the Soviet's arms deliveries to the Third World were made on a grant basis. In fact, the Soviets allocated over \$3 billion a year in outright military grants to only five countries. Even the minor recipients of Soviet arms receive approximately 30 to 45 percent of their arms on a grant basis.

Chart I.D.8

U.S.S.R. and U.S. Grant Military Aid to LDCs: 1982 Through 1987



In addition to this grant aid, the Soviets are providing other financial concessions, including offering credit at concessionary rates, accepting payment in soft currency or in commodity shipments, and rescheduling or forgiving long-term debts.

Soviet arms transfers have also provided a means for gaining basing rights abroad, as well as entree for Soviet advisors in the recipient country. For example, Soviet involvement in sub-Saharan Africa remains high. In Ethiopia there are approximately 1,700 Soviet military advisors. Likewise, in Mozambique about 850 Soviet military advisors train Mozambique's armed forces. In Angola, the presence of 36,000 Cuban military surrogates augments direct Soviet support which, in 1987, consisted of deliveries of additional Flogger fighter aircraft, HIP H helicopters, SA-2 and SA-8 surface-to-air-missiles (SAMs), and numerous tanks, artillery pieces, and BMP armored vehicles.

In Asia, the recent improvement in Soviet-North Korean relations has been marked by Pyongyang's receiving additional Flogger fighter aircraft and surface-to-air missiles. Since 1978, Moscow's military aid to Hanoi totals almost \$12 billion, with over 2,500 Soviet military advisors now stationed in Vietnam. Soviet assistance to India includes significant military deliveries of Fulcrum fighter aircraft, submarines, transport aircraft, and surface-to-surface missiles.

In the Middle East, Moscow is continuing its arms shipments to Syria, Iraq, and Libya. In Latin America, there are unique opportunities for the Soviets to weaken U.S. strategic interests. The continuing flow of large amounts of military and economic aid to Cuba and Nicaragua, Cuba's long-standing military debt, and the broadening commercial ties between Peru and the U.S.S.R. highlight the importance Moscow attaches to this region. Since 1982, Soviet-bloc assistance to Cuba and Nicaragua alone totals more than \$25 billion in economic aid and over \$9 billion in military assistance.

(3) Impact of Trends

The consequences of our greatly reduced and extensively earmarked security assistance budgets are dramatic. Without adequate funding we are unable to meet our allies' and friends' security requirements, to sustain their ongoing modernization programs, or to fund programmed spare parts and maintenance. Each non-earmarked country will suffer termination or curtailment of some multiyear programs along with procurement planning and budgetary disruptions. Moreover, drastically reduced U.S. security

assistance funding affects our efforts to achieve international defense cooperation.

The adverse consequences of this trend in underfunding security assistance will likely include the following:

- Obstructing our ongoing force modernization programs to correct major NATO force deficiencies. Reduced funding of these requirements may force program termination, will likely shrink European demand for U.S. arms exports, and will hamper our collective security efforts by complicating other bilateral negotiations.
- Foregoing the opportunity for security assistance to contribute to the war against illegal drugs. Underfunding particularly threatens our carefully nurtured indigenous drug surveillance operations with friendly nations in the northern tier of South America and the Eastern Caribbean.
- Decreasing the force readiness of critical friends and allies, notably Turkey and Pakistan. This could prove more costly to us than the slight burden of funding programs at the requested levels.
- Weakening defense cooperation and restricting our access to key facilities throughout Africa, the Indian Ocean, and the Pacific Basin. This could prove particularly troublesome in Kenya, the Philippines, and Thailand.
- Reducing U.S. influence and leverage in the Middle East. This could fatally undermine our overall efforts to build a sustained regional peace by providing moderate Arab states with the necessary means to defend themselves from their radical neighbors.

c. Conclusion

In summary, reductions in our security assistance budget from FY 1986 through FY 1988 have eroded the security and well-being of friendly countries, and put important U.S. foreign and defense policies at unnecessary risk. But the greatest impact of these cuts has been on the perceptions of friends and allies who fear that the United States cannot honor its commitments nor exert strong and effective leadership. At the same time, adversaries are gaining confidence that they can challenge our interests with impunity. The programs represented by the FY 1989 request are

lean. Further cuts to our security assistance budget risk serious damage to U.S. interests worldwide.

4. International Armaments Cooperation

a. Objectives and Emphasis

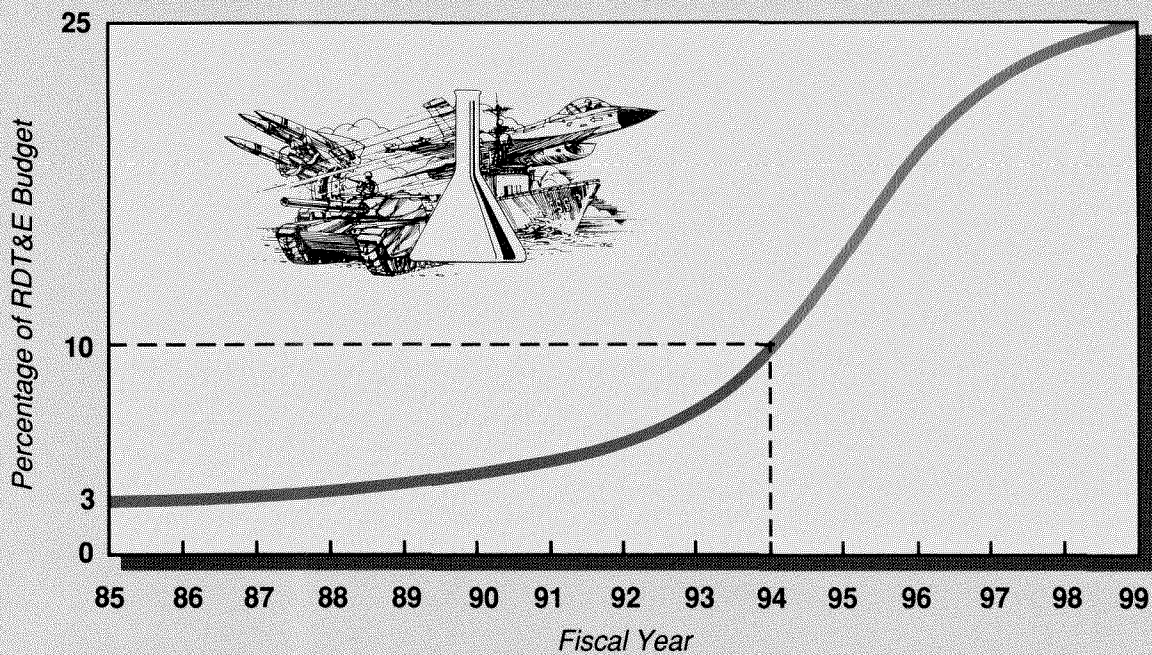
Our national security needs cannot readily be met with our resources alone. Therefore, we cooperate with allies and friends in acquiring military equipment. International armaments cooperation serves an array of coalition strategy goals. It reduces needless duplication of research and development (R&D) efforts by sharing the best available technology among allies. It promotes commonality and interoperability among friendly forces, thereby facilitating joint operations. It improves incentives for our allies to invest in force modernization and burdensharing. Finally, it achieves economies of scale throughout the acquisition and support cycle. Lack of cooperation in recent years has resulted in wasteful duplication in R&D and weapons production. National weapons programs have led to the deployment of six types of main battle tanks, six types of fighter aircraft, and a plethora of anti-tank missiles and armored vehicles within NATO. Our increased sharing of defense systems and equipment will ensure that the free world maintains adequate military strength within realistic resource expenditures.

b. Resources

Driven by resource limitations and a commitment to a strong conventional defense, the United States and its allies have pursued armaments cooperation as an effective means of correcting key conventional force deficiencies. To increase the affordability of planned and ongoing U.S. research, development, and production programs, we are augmenting steadily our investments in cooperative efforts in which development costs and resources are shared with our allies. As a result, we project that our investment in cooperative programs will increase from the current 3 percent of research, development, test, and evaluation (RDT&E) resources to 25 percent by the year 2000. In the mid-term, we expect annual cooperative R&D new-start funding to reach \$300 million for NATO and \$40 million for non-NATO nations. This will better enable us to field strong conventional forces.

Chart I.D.9

**Cooperative Research and Development
Percentage of RDT&E Budget**



Congressional funding for cooperative research, development, and testing efforts with NATO and major non-NATO allies has been a significant incentive for increased armaments cooperation. Since this cooperative research legislation was enacted in 1985, we and our allies have greatly expanded our armaments cooperation. International agreements have been reached, and development initiated, for 12 research and development projects, and others are in negotiation. Each of these projects involves the United States and one or more other nations sharing the costs of system development to redress a significant deficiency in our collective conventional posture.

There are two new activities of special note. First, 46 manpower positions, located in capitals in Europe, Japan, and Korea, have been established to support our armaments cooperation activities. Their establishment is also a visible symbol to our allies of the U.S. commitment. Second, we have instituted Defense Acquisition Board (DAB) procedures that make consideration of

international cooperative opportunities a part of all U.S. acquisition decisions.

Chart I.D.10

NATO Cooperative Research and Development Projects

Research and Development Projects	Participants										
	United States	Canada	United Kingdom	France	Germany	Netherlands	Denmark	Norway	Spain	Italy	Turkey
	•	•	•	•	•	•	•	•		•	
	•	•		•	•	•			•	•	•
	•	•	•	•	•				•	•	
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Ada Project Support Environments
155mm Autonomous Precision Guided Munition
Modular Standoff Weapons (MSOW)
Multifunctional Information Distribution System
NATO Identification System (NIS)
Standoff Airborne Radar Demonstration System (ARDS)
Advanced Short Takeoff and Vertical Landing Technology
Enhanced Fighter Maneuverability
Advanced Sea Mine
NATO Frigate Replacement—1990s
Hawk Mobility Enhancement
NATO Anti-Air Warfare System
As of 1 November 1987

c. Conclusion

The NATO Alliance is politically committed to a "Conventional Defense Improvement" effort. Emphasis is placed on redressing the critical deficiencies in NATO's conventional force structure, using armaments cooperation as an essential ingredient. Such cooperation creates new opportunities and challenges for U.S. and allied defense industries. Consequently, we are working with the U.S. defense industry to ensure that these arrangements result in

the effective use of the combined industrial potential of all NATO nations.

We are working with other allies and friendly countries to take advantage of combat experience and/or innovative technological developments to bolster the indigenous capabilities of these nations toward a more economical and effective military modernization.

United States, allied, and friendly resources are not concentrated primarily in one nation, as in the Soviet bloc. Through armaments cooperation we are working to lessen Moscow's advantage in this area. We are increasing our investment in cooperative programs, institutionalizing procedures for considering cooperative programs, and expanding organizational and staff support for these efforts. These steps, and the Congress's strong backing of them, are visible indications of our commitment to mutually beneficial cooperation.

5. Technology Security

a. Introduction

Technology security remains a critical underpinning of our collective security. Technology security programs are essential to maintaining the qualitative edge we rely on to offset the Warsaw Pact's quantitative advantages in troops and weapons. These programs do this by protecting our military-related technology from Soviet exploitation. From a budgetary standpoint, comprehensive technology security programs protect our investments in defense and avoid the greater defense expenditures that would otherwise be required to counter more advanced Soviet systems.

Effective technology security requires a collective approach, because a single nation's lapse can undo the efforts of others to control the transfer of critical technology. At the same time, our coordination with our allies and friends is necessary to ensure that controls on technology transfer do not hamper appropriate sharing of technology with nations friendly to the United States.

b. Recent Developments

We are now confronting new challenges and developments that serve to remind us that we cannot become complacent in our pursuit of technology security.

One development is the recently revealed string of sales by Japanese and European companies of propeller manufacturing technology to the Soviet Navy -- serious violations of collective export control standards that are exacting very high costs upon the United States and its allies. At least seven years ago, a Soviet foreign trade organization contacted Japanese and European trade firms regarding the purchase of multiple-axis automated propeller manufacturing equipment. Toshiba Machinery Company undertook to provide the basic milling machinery, and Kongsberg Vaapenfabrikk of Norway agreed to supply the numerical controllers (the "brains") and production software, as it had previously done with other Western countries' machines being shipped to the Soviet Union and China. In 1981, those two companies sent representatives to Moscow to sign contracts with the Soviets. The companies submitted false export documentation to their governments, listing technical specifications on their applications that were far lower than the actual specifications. In 1983 and 1984, eight machines and accompanying computer software were installed in Leningrad's Baltic Shipyard, which makes propellers for the Soviet Navy.

The costs to Western security of illegal technology transfers are staggering. This particular sale of propeller manufacturing technology, for example, will help make Soviet submarines substantially quieter, better enabling them to avoid detection by allied forces. To counter the effects of all technology transfer, the West will have to spend billions of dollars. Furthermore, this illegal transfer comes at a time when NATO's merchant fleets have declined so much in size that they cannot meet the Alliance's reinforcement needs. Thus these merchant fleets, upon which NATO relies so heavily, now face an even greater threat in the form of a dramatically improved Soviet submarine force. This development will obviously place an increased burden on NATO's naval forces in the event of a conflict with the Soviet Union.

A second new challenge stems from the Soviet Union's increasing emphasis on new technologies. The Warsaw Pact has a disturbing quantitative lead over NATO in conventional forces, and high-level Soviet writings increasingly stress the revolutionary implications of these new technologies. Improvements in Soviet military technology are enhancing Moscow's capability to execute its conventional blitzkrieg strategy against NATO. This makes it even more crucial to protect our military technologies.

Additionally, with increased contacts with the West, Soviet efforts to acquire Western technology are expanding through methods like joint ventures with Western firms that exploit legal trade channels; the use of circuitous trade diversions; document falsifications; and outright espionage. Indeed, Moscow's determined efforts demonstrate that acquiring Western technology is one of the highest Soviet priorities. Consequently, our efforts to protect dual-use technologies -- those that can be used for both military and civilian purposes (such as advanced computers) -- are every bit as essential as our controls over strictly military goods. Indeed, our expanding science and technology exchanges with the Soviets, within the broader context of increasing Western contact with the U.S.S.R., could increase the Soviet's opportunities to acquire our militarily significant technology if we and our allies and friends do not maintain our vigilance.

c. Control Efforts

(1) International

Our collective technology security depends on effective cooperation with our allies. The focal point for this cooperation is the Coordinating Committee on Export Controls (COCOM), which includes our NATO allies (except Iceland) and Japan. At COCOM we and our allies agree on what strategic products and technologies must be denied the Soviets and what collective measures we must take to accomplish this.

Another major cooperative COCOM concern is the need for more uniform enforcement procedures among member nations, particularly since the Soviets are so adept at exploiting any and all procedural loopholes. Unequal enforcement also penalizes the industries of those countries where enforcement is more comprehensive, creating tension among the cooperating countries and making industries more reluctant to comply with regulations. Therefore, serious efforts are being made by COCOM members to beef up their individual laws and enforcement mechanisms. For example, in the wake of the illegal exports by the Toshiba Machinery Company, Japan significantly strengthened its export control law.

Of course, no one country or group of countries in COCOM has a monopoly on sophisticated technology, and there is growing diffusion of militarily useful technologies into new markets where governments are not so accustomed to the need to protect their goods from East-bloc predators. For this reason, a major thrust of our efforts is obtaining the cooperation of major non-COCOM trading partners in preventing Soviet-bloc access to COCOM-controlled technology. This cooperation usually takes the form of

comprehensive strategic trade arrangements that facilitate legitimate trade in sensitive goods with non-COCOM countries while minimizing the risks of theft or diversion. U.S. exports that have been illegally diverted can be stopped as they transit other countries. Through these efforts, alternative sources for COCOM-controlled goods are being made inaccessible to the Soviet bloc. Agreements of this type have been worked out with several Asian countries. Other countries such as Sweden, Austria, and Switzerland have adopted their own control systems.

(2) Domestic

Last year President Reagan declared that U.S. government agencies would examine ways of simplifying U.S. controls to ensure that they do not hamper U.S. firms in the international marketplace. Some misguided critics have been calling for a broad dismantling of export licensing authorities, which could gravely damage our national security. A far better course is being followed by the Administration, which is pushing for increased international cooperation in COCOM, and is increasing U.S. government use of automation in export license application processing to serve the U.S. exporting community more efficiently. The Defense Department's clearinghouse for export control -- the Defense Technology Security Administration -- has taken the lead government-wide in installing and utilizing automated decision aids and data systems. They are designed to screen information and to identify more quickly those applications requiring further investigation. Our new systems are also providing an automated methodology making it possible to estimate the economic impact of Western technology transfers to Soviet-bloc countries.

d. Conclusion

In summary, our technology security initiatives at home and abroad are again enabling the West to expand its lead in technology areas critical to future defense systems. Our lead over the Soviets in state-of-the-art integrated circuit technology, which had fallen to two-to-three years in 1981, has rebounded to at least seven years, in large part because of the effectiveness of our export controls. It is not enough simply to best the Soviets technologically. We must also prevent the Soviets from harvesting the fruits of our own defense investments, our free market economy, and our free spirit of inquiry and innovation. Protecting our technological advantages enables us to spend less on defense while utilizing one of our Alliance's strengths to exploit a Warsaw Pact weakness.

Holding firm to our present technology security strategy is essential to maintaining our collective security in the 1990s.

Illegal and imprudent sales show that there can be very large costs when specific technologies are lost, and that American security now depends heavily on protecting other nations' technologies. The increasing importance of conventional arms in Europe requires the West to integrate technology security into its defense and arms control strategies. Only if we can keep our lead in technologies with military applications can the United States, its allies, and its friends maintain a strong and stable deterrent.

E. REDUCING AND CONTROLLING ARMS

Our primary arms control goal remains achieving effectively verifiable and stabilizing arms agreements with the Soviet Union leading to true reductions in nuclear and conventional arms, and global reductions in military spending. Our arms control policies are designed to supplement our overall defense policy -- not supplant it. Our successes, including the intermediate-range nuclear forces agreement, have resulted from our determination to bargain from a position of strength.

1. The Intermediate-Range Nuclear Forces Agreement

Our success in the intermediate-range nuclear forces (INF) negotiations resulted from NATO's steadfast adherence to the December 1979 decision to deploy INF, and the President's refusal to weaken our position in order to speed agreement. The "zero option" was considered impossible to achieve by critics when proposed by the President in 1981. In the face of allied solidarity, however, Moscow finally accepted our position. The INF Treaty will eliminate all ground-launched U.S. and U.S.S.R. ballistic and cruise missiles with ranges between 500 and 5,500 kilometers.

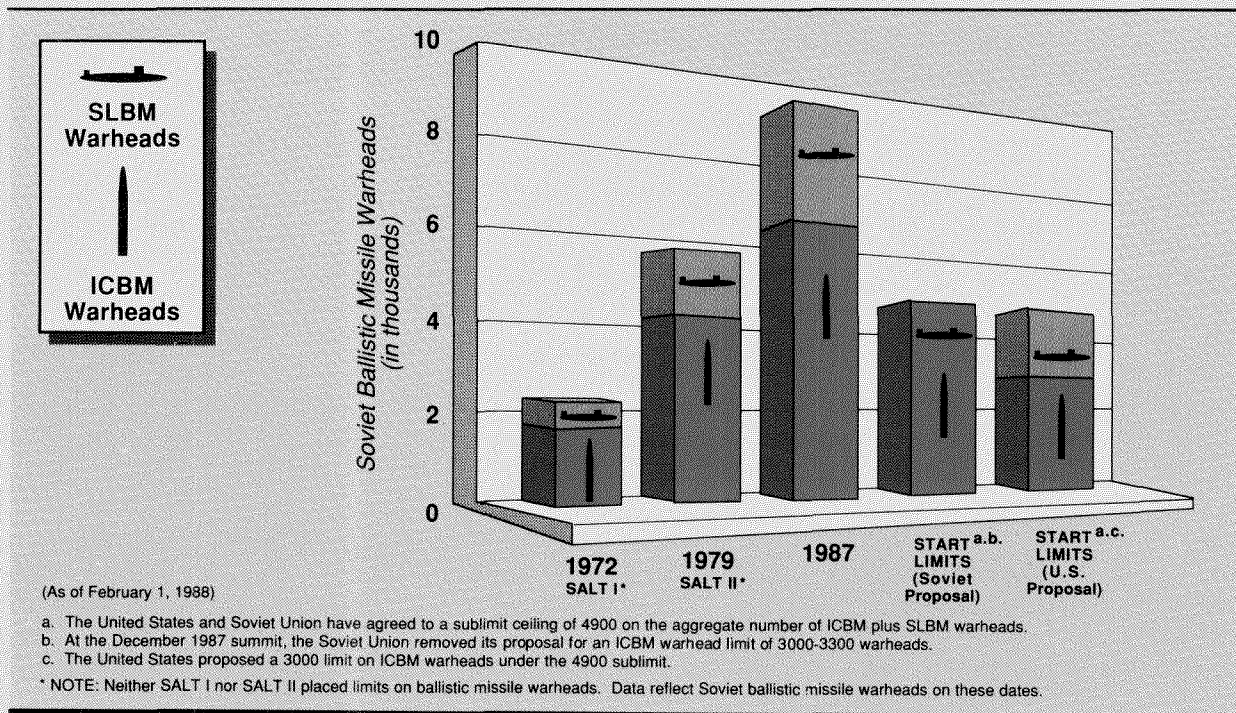
The principles the United States adhered to during the INF negotiations, established in part by the NATO ministers in the 1979 decision, were the foundations of our negotiating strength. First, we demanded equality of rights and limits under any agreement. We refused to accept Soviet proposals in the INF talks that would have locked in existing Soviet advantages in INF missiles. Second, we insisted that the negotiations remain bilateral. The United States will not negotiate limits on, or discuss compensation for, the nuclear forces of another country. We therefore insisted that any agreement must place equal limits on U.S. and Soviet forces, without including British, French, or any other country's nuclear forces -- which are neither owned nor controlled by the United States -- under the U.S. total. Third, we required that limitations be applied globally; the range, mobility, and transportability of modern Soviet missile systems make regional limits insufficient. Finally, we required that any agreement be effectively verifiable. This requirement cannot be overemphasized. Whatever agreements we reach must be verifiable with unambiguous criteria to identify violations in a timely manner. These principles continue to guide us in our negotiations with the Soviets in the Strategic Arms Reductions Talks, and the Defense and Space Talks.

2. Strategic Arms Reductions Talks

In the Strategic Arms Reductions Talks (START) the President is seeking an agreement leading to deep, equitable, and effectively verifiable reductions in the number of strategic nuclear arms held by both sides. This stands in contrast to previous SALT agreements, under which Soviet strategic warheads have increased dramatically (see Chart I.E.1). At the Geneva Summit in November 1985, President Reagan met General Secretary Gorbachev and an agreement in principle finally was reached to reverse this growth. Our primary focus in reducing strategic nuclear arms is on the systems posing the most acute danger of sudden nuclear attack -- offensive ballistic missiles. This is not a new objective. Our concern over the destabilizing nature of nonrecallable ballistic missiles, particularly intercontinental ballistic missiles (ICBMs) with their short flight-times, has always been a central theme of the U.S. START position.

Chart I.E.1

Growth in Soviet Strategic Offensive Warheads



In October 1986 at Reykjavik President Reagan and General Secretary Gorbachev agreed on the general outlines of a START agreement limiting both sides to a maximum of 1,600 deployed ICBMs

and SLBMs (submarine-launched ballistic missiles), and heavy bombers, with no more than 6,000 total warheads deployed on them. This agreement was a major step forward, and we have attempted to build upon it at Geneva. Progress is also being made on sublimits proposed by the United States that will promote stability by limiting the number of ballistic missile warheads on ICBMs, especially heavy ICBMs -- the systems most suitable for a first strike. Both sides have agreed that deployed ballistic missile warheads would be limited to 4,900, with no more than 1,540 warheads deployed on heavy ICBMs. Mobile missiles present a particularly difficult verification problem. Our position is to ban these missiles, although we have asked the Soviets to explain to us how they think these missiles are verifiable.

A major political obstacle to progress is Moscow's attempt to hold any agreement in START hostage to limitations on the Strategic Defense Initiative (SDI) that would effectively cripple or eliminate the program. We absolutely reject such pre-conditions, just as we did in the INF talks. SDI is a research and technology program on defensive systems that threatens no one. The Soviets themselves have long understood the importance of strategic defenses, and have devoted far more resources toward researching and developing their own strategic defense program than we have. We estimate that over the last two decades the Soviets have invested roughly as much in the development of strategic defenses as they have in strategic offensive forces. While we are willing to discuss the relation between offense and defense, the Soviets must desist in their efforts to stop SDI.

3. The Defense and Space Talks

Our goal in the Defense and Space Talks (DST) is to convince the Soviets to join us in making a fundamental change in the nature of the strategic balance by increasing reliance on effective strategic defensive systems rather than maintaining the current nuclear offensive standoff. Progress has been limited because the Soviets continue pushing for provisions in a DST agreement that would essentially kill SDI. We seek a Soviet commitment to explore with us how a cooperative transition to greater reliance on defense could be accomplished.

The United States took steps to alleviate Soviet concerns about SDI during the October 1986 meeting in Reykjavik. President Reagan offered a proposal in which both sides would agree not to withdraw from the Antiballistic Missile (ABM) Treaty for ten years. During that time (while continuing research, development, and testing permitted by the ABM Treaty), the sides would agree to reduce by 50 percent strategic offensive arms by 1991, and to eliminate all remaining offensive ballistic missiles by the end of

1996. At the end of 1996, both sides would be free to deploy strategic defenses, unless they agreed otherwise.

Unfortunately, Soviet General Secretary Gorbachev responded with an effort to stop SDI. He demanded that we agree to observe over the next ten years stricter limits than are provided for in the ABM Treaty, limits the U.S.S.R. refused to accept when the treaty was negotiated. These limits would prohibit the testing of space-based elements of a defense system outside of laboratories. With this proposal, Secretary Gorbachev held progress on eliminating ballistic missiles hostage to the crippling of our SDI program.

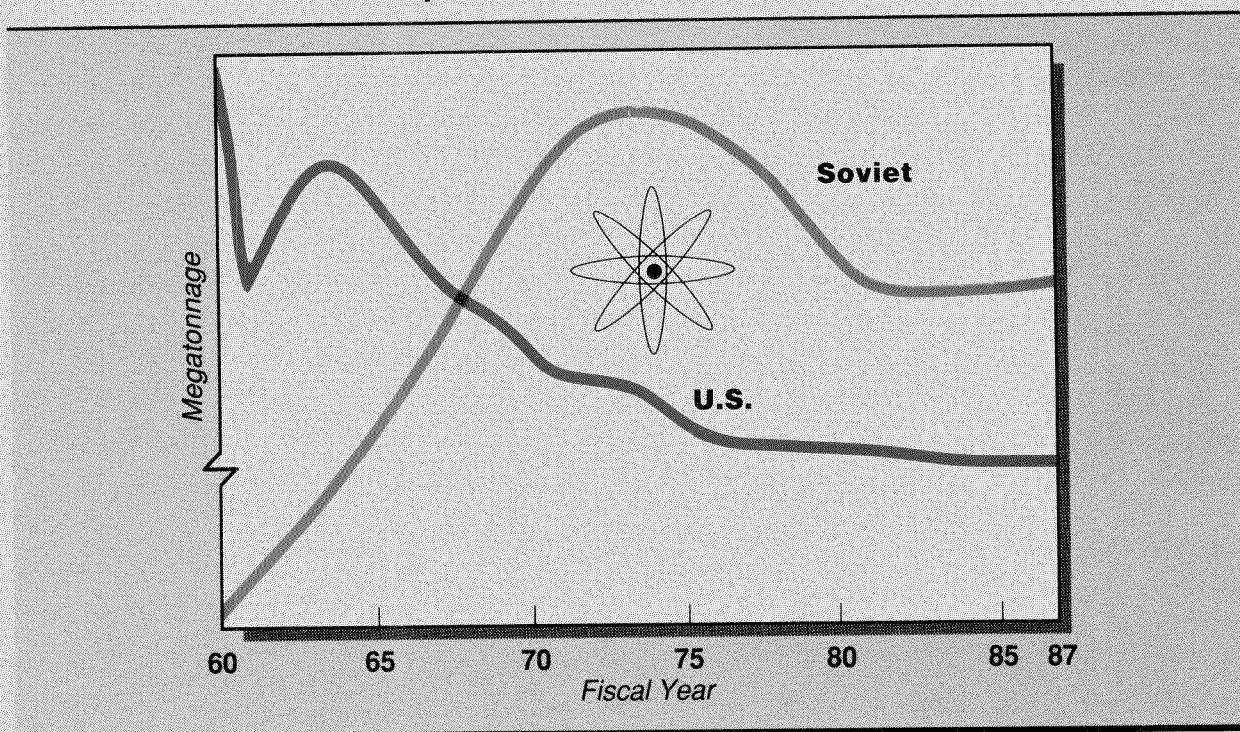
In response to Soviet rejection of our Reykjavik proposal, Secretary Shultz offered a new defense and space proposal during his April 1987 meeting in Moscow. Consistent with our joint commitment that 50 percent reductions in strategic offensive forces should be our priority objective in the current START negotiations, we proposed not to withdraw from the ABM Treaty through 1994. After 1994, either side would have the right to deploy defensive systems of its choosing unless both sides agree otherwise. Our new proposal also attempts to respond to Soviet stated concerns about the predictability of our future research efforts. We have proposed an annual exchange of programmatic data on planned strategic defense activities, reciprocal briefings on our respective strategic defense efforts, visits to associated research facilities, and establishment of procedures for reciprocal observation of strategic defense testing. All of these have been rejected as inadequate by the Soviets, who insist that the ABM Treaty be adhered to in such a way that SDI is crippled -- while Soviet ABM programs are allowed to go forward.

4. Nuclear Testing Limitations

With regard to limitations on nuclear testing, this Administration has been forthright in explaining to the American public the national security requirement for continued nuclear testing, which the United States conducts in full compliance with existing international agreements. Furthermore, nuclear testing has been a major factor in our ability to reduce dramatically the destructive power of our nuclear arsenal since 1960 (see Chart I.E.2). Briefly put, as long as we must rely on nuclear weapons to deter Soviet aggression, nuclear testing will be required to ensure that our nuclear weapons remain safe, reliable, effective, and survivable -- in short, that our deterrent remains credible.

Chart I.E.2

Reduction in Explosive Power of the U.S. Nuclear Weapons Stockpile as Contrasted to the Growth in Explosive Power of the Soviet Nuclear Weapons Stockpile



For these reasons we strenuously oppose congressional efforts to ban effective testing of the nuclear systems on which we depend most critically for deterrence. At the same time, this Administration long has had a constructive and practical agenda in the area of nuclear testing limitations. Indeed, the U.S.-Soviet Joint Statement of September 17, 1987 laid the groundwork for negotiations that began in November 1987 and which are addressing nuclear testing issues in a logical and stabilizing manner, while permitting the United States to conduct the testing necessary to its security. The U.S. position remains -- and the Soviets now have agreed -- that the first step must involve new and specific measures providing effective verification of the 1974 Threshold Test Ban Treaty and 1976 Peaceful Nuclear Explosions Treaty. As the joint statement suggests, after the necessary verification improvements have been agreed to and the treaties ratified, we will propose that the United States and the Soviet Union enter immediately into negotiations on ways to implement a step-by-step parallel program -- in association with a program to reduce and eventually eliminate all nuclear weapons -- to limit and eventually end nuclear testing.

5. Conventional Arms Control

Separate from nuclear arms control but equally significant are the ongoing conventional arms control negotiations. These talks gain added importance in light of the recent signing of the INF Treaty and progress in START negotiations. The United States has a responsibility to act in concert with its NATO allies to ensure that a conventional balance is struck in Europe which both enhances regional stability and preserves the Alliance's ability to execute its strategy of flexible response.

It is imperative that NATO approach any conventional arms control negotiations with the Warsaw Pact in a unified manner. By doing this, NATO will project the same strength of resolve as it did in successfully pursuing the "Dual Track" decision of 1979. Any decision by the United States to take unilateral steps in conventional arms control will only weaken perceptions of NATO resolve, both within the Alliance and in the Soviet Union.

6. Chemical Arms Negotiations

The Administration also favors the long-term goal of eliminating chemical weapons, and negotiations in this area continued to make progress in 1987. The multilateral negotiations at the Conference on Disarmament in Geneva have struggled with some of the complicated issues surrounding the proposed global ban, such as preserving industry's rights in the context of effective verification, and establishing the complex organizational structures that would oversee a ban. An international industrial experts meeting was convened in July to begin assessing such tasks. The bilateral discussions with the Soviet Union, which were introduced as a result of the 1985 Geneva Summit, have now met for seven rounds, and an eighth is planned. The bilateral talks also have focused on the issue of verification and the requirements of entering a ban into force.

7. Nuclear Risk Reduction Centers

This Administration's commitment to seeking improved confidence-building measures involving the Soviet Union took another practical step forward with our agreement, signed on September 15, 1987 to establish Nuclear Risk Reduction Centers (NRRCs). The objective of NRRCs is to help reduce the risk of war between the United States and the Soviet Union that otherwise might result from accident, miscalculation, or misunderstanding.

The NRRCs are not intended to supplant existing channels of communication, or have a crisis-management role. Their principal function will be to exchange information and notifications as required under certain existing and possible future arms control and confidence-building agreements. Indeed, the NRRCs will play a key role in the exchange of information required to achieve effective verification of the INF agreement.

8. Treaty Compliance

A final critical point must be made. Arms control agreements enhance stability and reduce the threat of war only if the parties fully comply with them. Past and current Soviet practices in this regard, however, give us serious cause for concern. The Soviet record of repeated arms control violations, coupled with their refusal to take actions to correct those violations, have worked to undermine the confidence essential to an effective arms control process. These infractions call into question the important security benefits that arms control can bring. Therefore, we cannot take Soviet compliance for granted, and must monitor Soviet activities with care to determine that the Soviet Union complies with its obligations under current arms control accords. Should violations occur, we must take all necessary action to redress the impact of those violations. We shall insist upon nothing less than full compliance, and will not allow a "double standard" of compliance to arise under which the United States, but not the Soviet Union, is bound by an arms control agreement.

9. Conclusion

In summary, although we have made considerable progress toward reducing the threat of nuclear war, much remains to be accomplished. Achieving a START agreement leading to 50 percent reductions in strategic nuclear arms, especially strategic ballistic missile warheads, would be another major step toward a more stable nuclear environment. The progress we have made is attributable directly to our negotiating from a position of strength: the Soviets did not offer to destroy significant numbers of SS-20 missiles until our Pershing IIs were deployed, and our strategic modernization program and SDI are responsible for the Soviet decision to engage in serious START negotiations. Great credit must be given to our NATO allies for their determination, despite strong internal pressures, to support the "Dual-Track" decision. In the face of such determination the Soviets have little choice but to negotiate. I ask the Congress to show equal determination and courage in supporting our programs and negotiations. Together we can achieve our shared goal of greatly reducing the threat of catastrophic nuclear war without sacrificing our security.

F. COMPETITIVE STRATEGIES

To be complete, our defense decisionmaking process must integrate our policies and program plans into a coherent whole, and include a broad perspective on the United States' evolving strategic position and requirements. We must establish and, as appropriate, institutionalize organizations and procedures to ensure such integration. This chapter discusses one of our efforts toward this end: our Competitive Strategies Initiative. As highlighted in recent reports, Competitive Strategies has become a major element of defense strategy and planning. One of our most important goals for 1987 was to begin the process of institutionalizing Competitive Strategies within the department. I am pleased to report that considerable progress has been made toward this end.

1. Definition and Concept

Competitive Strategies is a method of strategic thinking that evaluates our national defense strategy in terms of our long-term relations with the Soviet Union. Its objective is to enhance deterrence and U.S. and allied security. This initiative is aimed at identifying, developing, and prioritizing key U.S. defense efforts intended to shape the pace and direction of superpower military competition into safer and more stable areas. We are not attempting to bankrupt the Soviet Union or undermine its economy; we are striving to influence the way the Soviets use their defense resources in order to minimize the threat that they pose to our interests.

A competitive strategy analysis employs a chess match methodology that aligns enduring U.S. strengths against enduring Soviet weaknesses in a move-response-counterresponse sequence. This process seeks to exploit areas of potential high leverage gain that will ideally result in a new military capability reflecting a combination of operational concepts, systems, technologies, and organization approaches. By establishing this way of thinking within our planning processes, I expect that we will be better able to identify and focus on the most effective use of our resources. In this sense, Competitive Strategies contributes to the nation's fiscal health as well as to our strategic thinking. It offers a sensible approach to preserving or improving our military capabilities as resources become more scarce.

2. Organization

To institutionalize Competitive Strategies, we began by forming the Competitive Strategies Council. I chair the council, which meets to provide guidance for the initiative, approve candidate Competitive Strategies, and set priorities for their implementation. Other council members include the Deputy Secretary of Defense, the Under Secretaries of Defense for Acquisition and Policy, the Service Secretaries, the Chairman of the Joint Chiefs

of Staff, the Service Chiefs, the Directors of the Defense Intelligence Agency (DIA) and the National Security Agency (NSA), and the Steering Group's Chairman.

Subordinate to the council, the Competitive Strategies Steering Group also was established. Chaired by the Special Advisor to the Deputy Secretary of Defense, the steering group's primary functions are to identify candidate Competitive Strategies areas, designate personnel to serve on the Competitive Strategies Task Forces, orchestrate the efforts of those task forces, and make recommendations to the council. Steering group members include representatives from the offices of the Under Secretary of Defense for Acquisition; the Service Secretaries; the Chairman of the Joint Chiefs of Staff; the Service Chiefs; the Director for Program Analysis and Evaluation; the Director of Net Assessment; and the Director, DIA. To oversee the day-to-day management of the Competitive Strategies process, we established within my secretariat a Competitive Strategies Office, with representatives from each of the military departments.

A Senior Intelligence Committee was organized to provide intelligence support to the council and to the Competitive Strategies process. The committee is composed of the DIA Director (Chairman), the NSA Director, the Service Intelligence Chiefs/Directors, the Deputy Director for Intelligence from the Central Intelligence Agency; and the Director of the Intelligence Community Staff. An Interagency Intelligence Working Group, subordinate to the committee, is available to assist the steering group and the task forces. The bulk of the analysis in developing Competitive Strategies is done by a series of independent, ad hoc task forces. Each task force is an intradepartmental group constituted for a period of approximately 90 days to examine particular issues selected by the council.

3. Results

Last July our first Competitive Strategies Task Force was convened to examine mid-to-high intensity conventional conflict focused on Europe within a global war context. Task force members began their evaluation by identifying critical military tasks that the Soviets consider essential for prosecuting a war with NATO. Next, they applied a Competitive Strategies methodology against their findings, aligning enduring United States strengths against enduring Soviet weaknesses. Based on their analysis, the task force developed several candidate Competitive Strategies, with options ranging from operational concepts to employ existing personnel and resources more effectively, to new technologies and systems. The task force next evaluated the possible range of potential Soviet responses to the postulated U.S. initiatives. Finally, prospective American countermoves were considered and the net result for the United States was assessed.

This first task force looked at global conventional war with a focus on the European theater. The four recommendations improve

NATO's defense posture in areas involving Soviet command and control operations, and Soviet air and ground penetration capabilities. Their concepts exploit the Soviet requirement for strict time management and maintenance of a high-operations tempo. NATO advantages in data automation and processing, target acquisition, and intelligence fusion and dissemination can exploit this dependence, providing for more effective use of NATO's conventional capabilities.

A Soviet inability to redress this problem would force them to compete in an arena in which they recognize they have serious weaknesses. Task Force proposals now being examined reflect a combination of new doctrinal and organizational approaches, innovative operational concepts, existing systems, and emerging technologies. The aim is to channel competition into areas in which we can take advantage of core, long-term Alliance strengths. Highlights of four proposed initiatives are as follows:

-- *Countering Soviet Air Operations:* The task force recommended that NATO, led by the United States, enhance its offensive capabilities against Soviet sortie generation by developing a phased attack on the Soviet's main operating bases and air infrastructure led by unmanned aircraft. From a defensive air perspective, the task force recommended measures to strengthen the integrity of NATO's air and ground operations.

-- *Countering Soviet Penetration of NATO Forward Defenses:* The task force recommended developing an asymmetric force capability comprised of an integrated network of long-range, mobile weapons platforms, and target acquisition and command and control assets capable of engaging Soviet mobile targets beyond the range of Soviet artillery and multiple launcher rocket systems.

-- *Stressing the Warsaw Pact Troop Control System:* The task force recommended frustrating Soviet tactical operations by blocking preplanned options. This would force their communications to the operational level where a replanning capability exists. By use of direct attack, special operations, and deception, NATO could counter the Pact's ability to devise and execute operational responses.

-- *Countering Soviet Global and Multitheater Operations:* Finally, to exploit Soviet aversions to a multitheater, protracted conflict, the task force recommended developing an offensive warfighting capability for conducting large-scale joint and combined conventional offensive military campaigns.

All four of the proposals to improve NATO's defense posture center on new and improved military capabilities that share a number of common characteristics; for example: various unmanned systems (e.g., surface-to-surface, precision standoff, air-to-surface, and cruise missiles; drones; and RPVs), area munitions, various extended-range tube-launched projectiles, rapidly emplaceable barriers, precision-penetrator warheads, and smart

submunitions. The task force proposals take advantage of advances in automatic data processing, intelligence fusion, and electronic miniaturization. Each of the recommendations can be enhanced through extensive use of low-observable technologies and an integrated command, control, and communications system. The greatest effect would be gained by synergistic employment of these capabilities in combination with a robust NATO-wide command and control system.

The task force's recommendations are now being staffed within the department to determine the best ways to implement them. In addition, the Task Force Report has been provided to the Commanders in Chief (CINCs) of the Unified and Specified Commands, who will play an important role in implementing any competitive strategy adopted.

One of the most beneficial byproducts of our efforts to date is the catalytic effect realized within the department. The Services and the Joint Staff are all actively participating in the Competitive Strategies Initiative. Others within the department also are contributing to the collective effort. The Under Secretary of Defense for Acquisition (USD(A)) has established a Competitive Strategies Panel. Initially, the panel will focus on technologies and systems to support the work of the first task force. In the long term, the panel will manage the department's overall acquisition support for the initiative. To assist in this effort, the USD(A) also has chartered a Competitive Strategies Task Force within the Defense Science Board, comprised of distinguished civilians from the private sector.

The initiative is gaining momentum. Another task force will begin work early this year. The Competitive Strategies approach also will be factored into our threat assessment, war gaming, and policy review processes. Further, we envision that the concept will be incorporated into the thinking of our professional staff colleges and our senior service schools.

The main value of Competitive Strategies is its utility in changing strategic and fiscal environments. For example, with the reduction in nuclear arms mandated by the INF Treaty, Competitive Strategies provides a useful tool to ensure a credible deterrence in Europe and elsewhere. I also believe that in the resource constrained environment we face in the years ahead, Competitive Strategies in this and successive administrations will provide the United States the advantage we need in our long-term competition with the Soviet Union.

Part II

Defense Resources

A. THE DEFENSE BUDGET

1. Introduction

To achieve America's defense policy goals and preserve the common defense, we have a sound military strategy that guides the development, acquisition, and deployment of U.S. forces in peace and, if need be, in war. The manpower and materiel programmed to execute this strategy must be sufficient to preserve our security against existing and near-term threats. Our defense budget states what resources are required to carry out our strategy.

Non-defense resources for ensuring the health and welfare of our people are provided by federal, state, and local governments, and the private sector. If resources for these purposes are limited in one sector, another can make up the difference. Only the federal government, however, provides for our national defense. If the federal government does not allocate sufficient resources for our security, or does not provide these resources in a timely manner, no other source will make up the shortfall. Therefore, our collective purpose must be to request and enact a defense budget that protects and preserves our freedom and security in the most efficient manner possible, and at the lowest acceptable level of risk.

The preparation of a defense budget is a formidable task. It requires our selecting budget and program alternatives that utilize our available resources in the most effective and efficient manner. Defense budgeting during this period of severely constrained resources is particularly difficult, as we must make tough choices that reduce or eliminate military programs, resulting in increased risks to our security. In this fiscal environment, we must assess carefully the threats to our security, and the existing capabilities of our forces and those of our allies. Equally important, our deliberations and decisions must be made with a keen understanding of the dangers we confronted in 1981 when we last had to restore America's defenses from the effects of severe underfunding.

2. Security Requirements and Fiscal Concerns

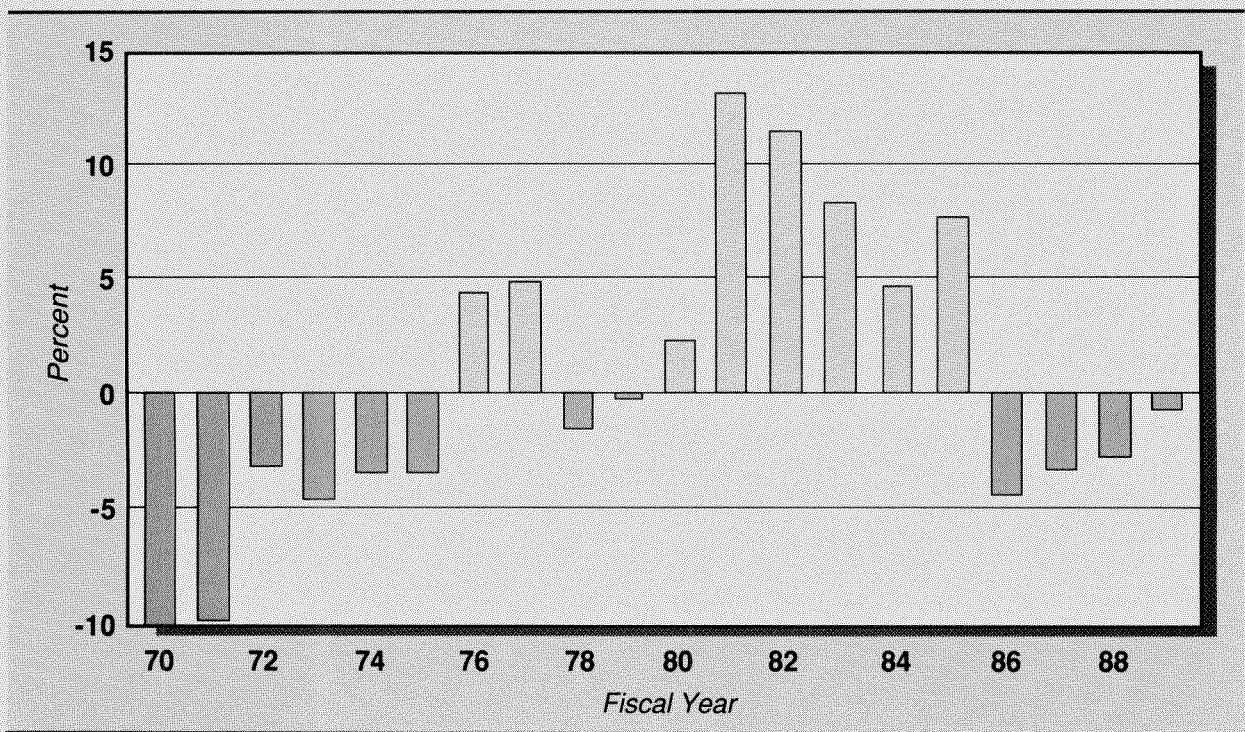
a. Revitalizing Our Defenses

To appreciate fully the difficult challenges we faced in adjusting our current budget, it is important to understand

clearly the resources and effort that were required to overcome defense underfunding in the 1970s. Then, economic considerations played the major role in setting the level of defense expenditures, as the federal government tried to cope with what many thought to be long-term runaway inflation. Annual double-digit price increases were driving up the cost of government, especially in entitlement programs, and fiscal restraint was decreed for all areas of federal spending. Unfortunately, reducing the defense budget became the primary means of lowering federal expenditures and, consequently, real defense spending declined by over 20 percent from 1970 to 1980 (see Chart II.A.1).

Chart II.A.1

Real Growth in Defense Budget Authority



Our failure to provide adequate defense resources in the face of a growing threat left us with a force structure insufficient to execute our military strategy. Our troops' combat readiness deteriorated; critical modernization programs were deferred; and investment in future defense capabilities was seriously curtailed. Low military pay and poor quality of life for service families led to recruiting problems and an exodus of highly trained personnel. Readiness and sustainability suffered as training, spare parts, and ammunition were not adequately financed. Acquisition inefficiencies prevailed as production

runs were stretched out, weapon systems' costs sky-rocketed, and new technologies failed to move into production. America's prestige declined, and our allies questioned our ability to meet defense commitments. Unfortunately, these defense reductions did not contribute appreciably to keeping overall federal expenditures in line since non-defense spending kept rising. Furthermore, while America was cutting back on the resources it devoted to defense, the Soviet Union was engaged in an ambitious and sustained program to expand and modernize its military forces. Thus, paring America's defense resources proved not only an ineffective economic policy, but also an unsound national security policy.

In 1981, the American people and the Congress recognized the dangers inherent in our weakened defense posture, and strongly supported President Reagan's plan for rebuilding U.S. defense capabilities. The President's program redressed our immediate defense shortfalls while laying the groundwork for a long-term modernization program. It has taken seven years and nearly \$2 trillion to redress the short-sighted budget cuts of the 1970s and restore the defense capability our security requires -- a well-manned, well-equipped, balanced structure of strategic, general purpose, and special operations forces capable of deterring aggression across the entire spectrum of conflict, or of securing U.S. objectives should deterrence fail. Our more robust military posture promotes our leadership among allied and friendly nations, and strengthens our hand in dealing with adversaries.

b. Preserving Our Capabilities

Over the last few years, domestic economic considerations once again have dictated the level of defense spending, as reducing the federal deficit became the primary objective in setting the level and allocation of federal resources. Congressionally approved levels of defense funding have decreased in real terms for the past three years (see Chart II.A.1), for a cumulative reduction of 10 percent over 1985 levels. We are now again witnessing the consequences of defense underfunding through the reemergence of problems in our force readiness and modernization. Just as in the 1970s, we are being forced to delay important programs, reduce training, defer maintenance, and curtail plans to complete stockpiles of ammunition, spare parts, and other essential equipment. These stretchouts are adding greatly to our costs, thereby inviting further reductions and stretchouts, and jeopardizing the fulfillment of our modernization plans to meet future threats.

Complicating our difficulties has been the absence of prompt and decisive congressional review of defense budget

requests, which has given way to delay and vacillation as considerations other than national security have dominated the defense budget deliberations. Sadly, appropriation committees often ignored mandated budget resolution levels and did not appropriate within either authorization or resolution levels. Furthermore, authorization and appropriation legislation has become burdened with restrictions on subjects ranging from contracting procedures to arms control. Such budgetary disorder is not conducive to making reasoned defense budget and program decisions affecting the nation's security. This disorder has resulted in delays to vital programs and increased costs, which threaten our ability to achieve our defense objectives, all at a time when we are trying to lower costs to deflect some of the impact of severe funding reductions.

The return to a period of unstable and inconsistent defense funding, combined with budgetary disarray, have underscored the reality that improvements in defense capabilities are perishable -- they cannot be preserved without sufficient resources -- and insufficient support for defense increases the risks to our security. It is this exact condition we hoped to avoid with the FY 1988/FY 1989 budget we submitted last year. Unfortunately, it is the same condition we face again this year.

3. The FY 1988 / FY 1989 Defense Budget

a. Overview

Last January the President submitted a biennial defense budget proposing \$303.3 billion for FY 1988 and \$323.3 billion for FY 1989. Two-year budgeting, which was recommended by the President's Commission on Defense Management and required by the FY 1986 Defense Authorization Act, represents a serious effort to promote stability and consistency in defense budgeting. It could afford DoD significant opportunities to realize savings and other benefits from assured procurement quantities and approved levels of effort. Ultimately, the Congress did not provide a two year authorization and appropriation. We plan to continue our two-year cycle of planning, programming, and budgeting defense requirements, however, and will submit a biennial defense budget for FY 1990/FY 1991.

After deliberating on our FY 1988/FY 1989 budget request for nearly nine months, the Congress joined the Administration in a "budget summit" to end the budget gridlock. In late December the Congress enacted and the President signed defense appropriations for FY 1988 consistent with the budget summit agreement, which provided budget authority of \$283.2 billion. This level is \$20.1 billion lower than we recommended. It is,

however, clearly preferable to the level that would have resulted from Gramm-Rudman sequestration. The budget summit also provided for budget authority of \$290.8 billion for FY 1989, \$32.5 billion lower than that requested in last year's two-year budget submission (see Table II.A.1). This represents a 0.7 percent real decline from 1988. Appendix A shows budget data by appropriation title and by component.

Table II.A.1

Department of Defense Budget
(Dollars in Billions)

	FY 1986	FY 1987	FY 1988	FY 1989
Current-Year Dollars				
Total Obligational				
Authority (TOA) ^a	280.3	283.5	289.0	291.6
Budget Authority (BA) ^b	281.1	279.5	283.2	290.8
Outlays ^c	265.5	274.0	277.3	285.5
FY 1988 Dollars				
Total Obligational	310.8	305.8	298.8	291.6
Authority (TOA) ^a	311.9	301.6	292.8	290.8
Budget Authority (BA) ^b	294.2	296.4	287.2	285.5
Outlays ^c				
^a Total Obligational Authority (TOA) represents the value of direct defense program for each fiscal year, regardless of financing. ^b Budget Authority (BA) permits the obligation of funds for immediate and future disbursement and is associated with the year the authority takes effect. Generally the difference between TOA and BA stems from the application of receipts that offset total budget authority. ^c Outlays represent actual expenditures. Less than 60 percent of FY 1989 outlays will result from FY 1989 budget authority; the remainder will come from budget authority provided in earlier years.				

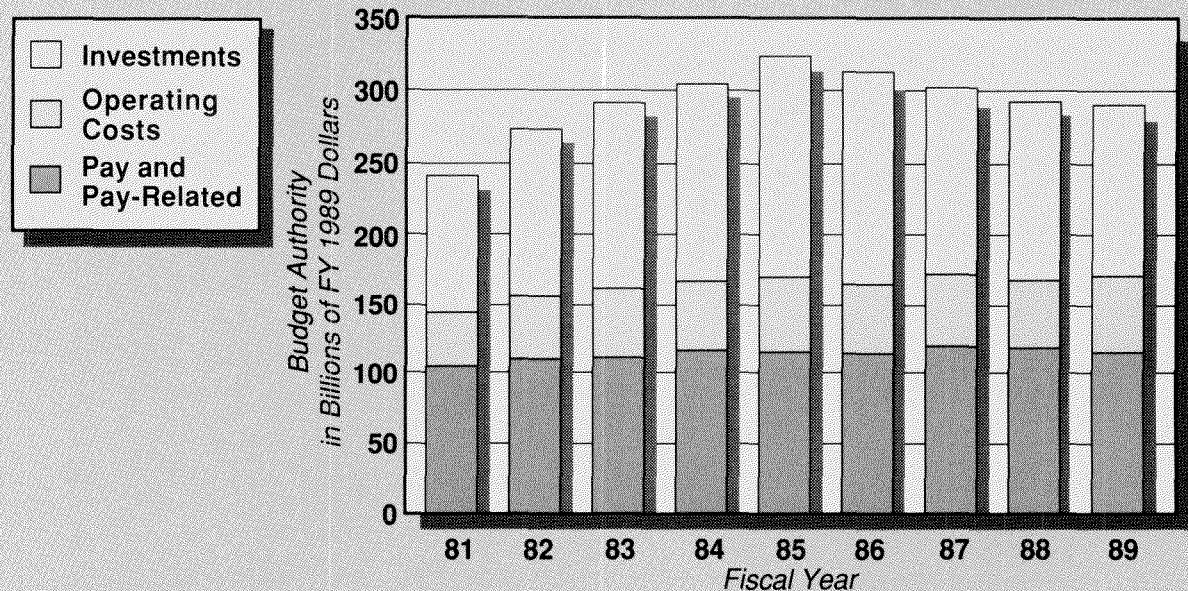
b. Components of the FY 1988 / FY 1989 Defense Budget

The \$32.5 billion reduction to our FY 1989 defense program -- a program we had determined was the minimum essential to meet our national security requirements without increasing our security risks -- forced us to make difficult but necessary choices among defense priorities. No area of the defense budget was exempt from close scrutiny: reductions in force structure were

required to ensure that we did not return to the era of a "hollow," unprepared, and ill-equipped force; uneconomical or marginal programs were eliminated; and programs proposed as new starts were reevaluated so we could maintain momentum in our modernization efforts. Every effort was made to preserve a balanced program between people, readiness, and modernization (see Chart II.A.2).

Chart II.A.2

Department of Defense Budget Shares



A lower budget authority in the Military Personnel Accounts in FY 1986 reflects the congressional direction to finance \$4.5 billion for the military pay raise and retirement accrual costs by transfers from prior year unobligated balances.

The distribution of FY 1988 and FY 1989 budget authority by major appropriation title is shown in Chart II.A.3. Military Personnel, and Operations and Maintenance (O&M) (including payments to military and civilian personnel, the accrued retirement cost of the current military force, allocations for maintenance and repair of equipment and for utilities, medical costs, training, fuel, and spare parts), represent about 56 percent of DoD's budget authority. The remainder of the budget contains funds for research and development (R&D), weapon systems procurement, military construction, and family housing.

Outlays in FY 1988 and FY 1989 (see Chart II.A.4) are primarily for current year operations (4 percent), pay (45 percent), and prior year investment requirements (40 percent). Outlays from prior year programs represent amounts already on contract and are largely a function of procurement and R&D

Chart II.A.3

Department of Defense Budget Authority
(Dollars in Billions)

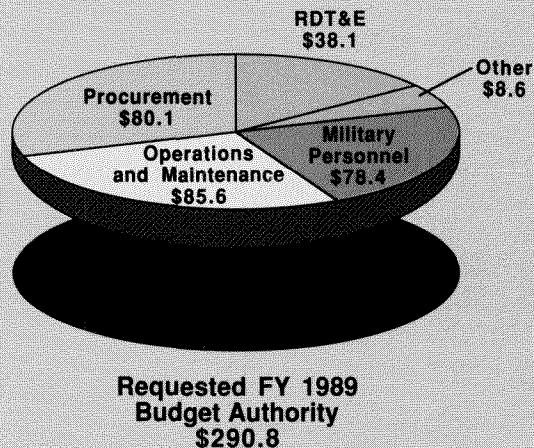
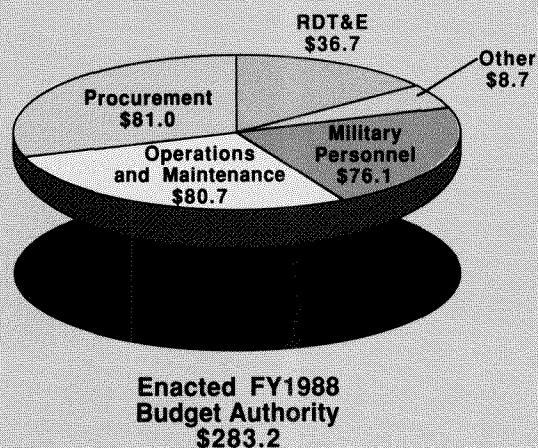
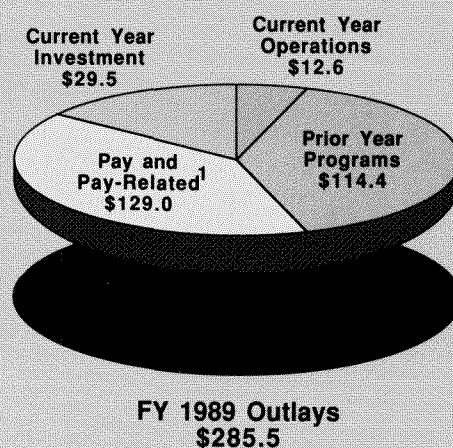
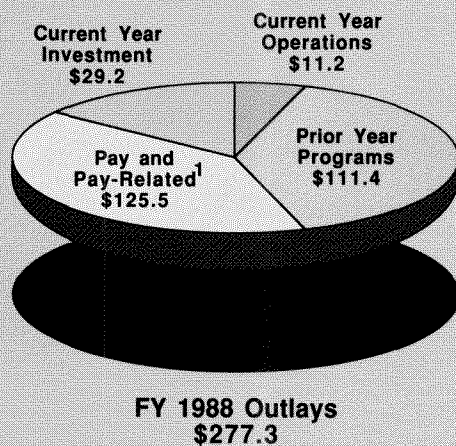


Chart II.A.4

Department of Defense Outlays
(Dollars in Billions)



1. Includes Retired Pay Accrual Costs

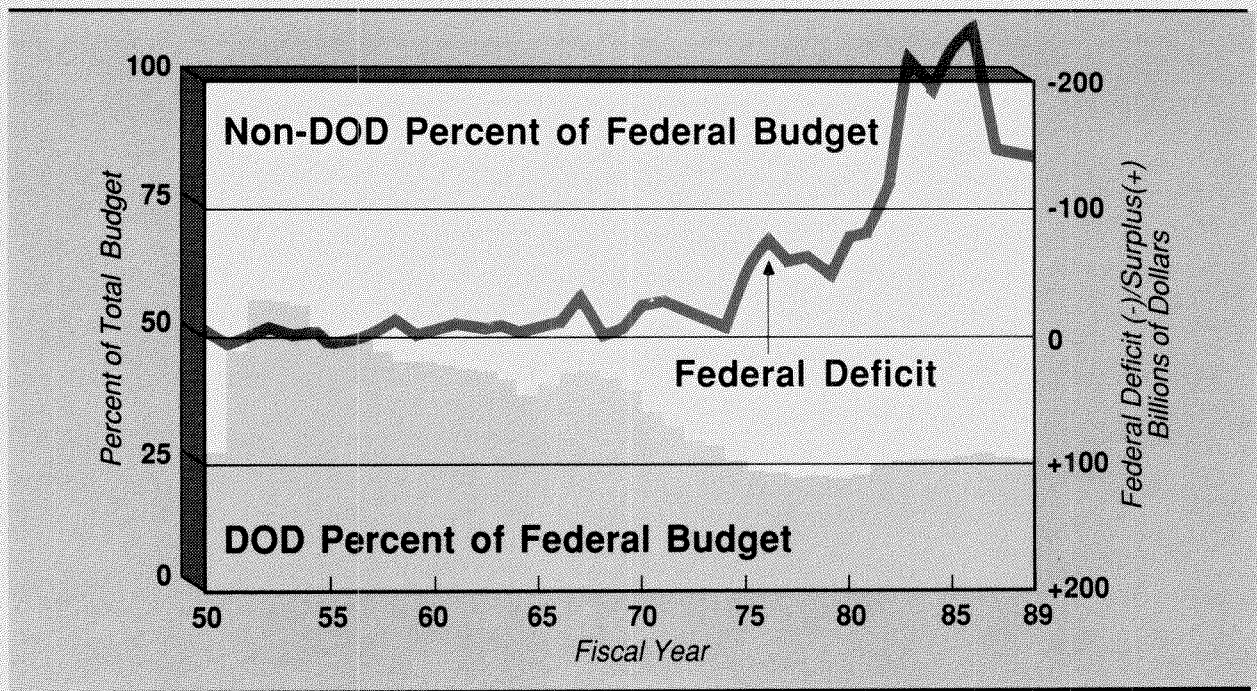
investments made in previous years. Only 11 percent will be spent on new investment programs in FY 1989.

4. Affordability of Defense Spending

This discussion would not be complete without addressing the affordability of allocating national resources to defense. It remains my firm belief that providing sufficient resources for defense is not the principal cause of unrestrained deficit growth; by extension, providing insufficient resources for defense cannot be the principal solution. Recent history proves this point. During the 1960s, for example, when almost 50 percent of the federal budget was devoted to defense, federal deficits were almost nonexistent (see Chart II.A.5). Yet in the 1970s, when defense accounted for 25 percent of federal spending, the deficit was on the rise. Today, even though

Chart II.A.5

Federal Budget Shares and the Deficit

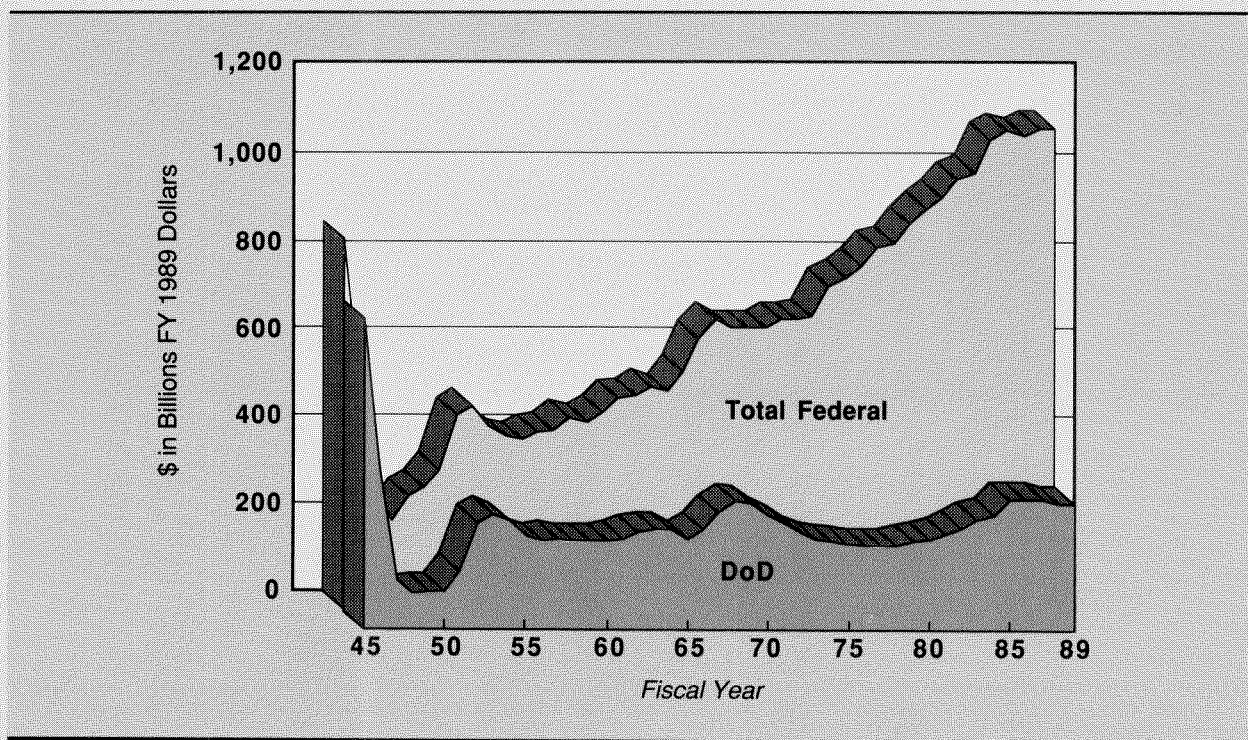


defense claims a slightly higher share of federal resources than it did during the 1970s, the deficit is still higher.

An objective review of federal spending in the first half of the 1980s shows that America's recent defense buildup was not funded at the expense of vital domestic programs. The growth in defense spending from 1981 to 1985 reversed a long-term trend of no growth in defense budgets (see Chart II.A.6). Nevertheless, non-defense spending growth consistently exceeded defense spending growth from 1981 to 1985.

Chart II.A.6

Total Federal Outlays

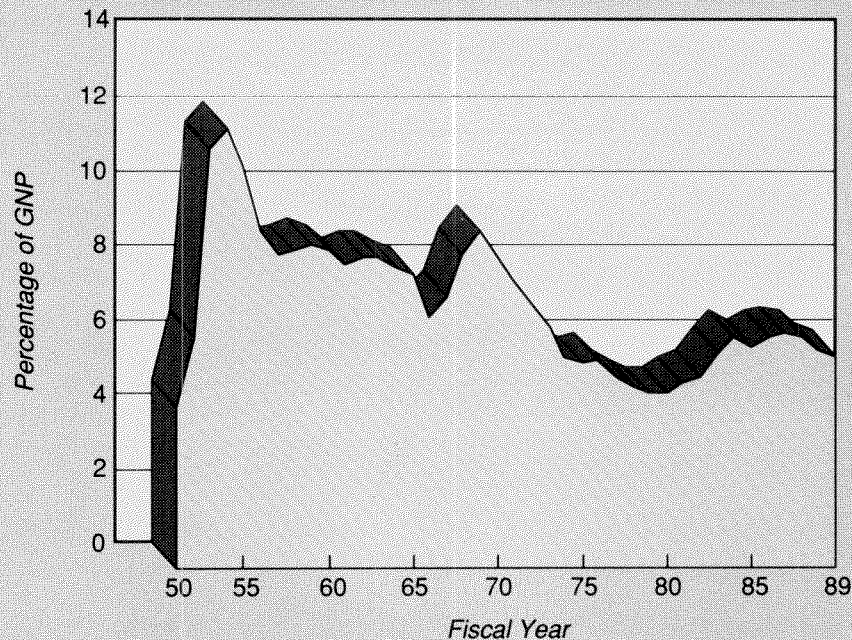


It is also important to underscore that affordability, in terms of the share of our gross national product (GNP) devoted to defense, is not at issue. In fact, fiscal constraints are forcing a reduction in the share of GNP we allocate to defense, from an average of 6.2 percent from FY 1982-FY 1987, to only 5.7 percent in FY 1989 (see Chart II.A.7). This modest level of investment is 25 percent less than the level of GNP we invested in our security during the early 1960s, and less than 1 percent more than the average share of GNP invested in defense during

the 1970s. It is also less than half the share of national wealth the Soviets allocate to military spending.

Chart II.A.7

Defense Outlays as a Share of the Gross National Product



5. Conclusion

Long-range defense budget levels are shown in Table II.A.2. Although the planned funding levels for FY 1990 through 1992 provide a 2 percent real growth path, we cannot ignore the fact that these funding levels are insufficient to maintain the degree of security we envisioned a year ago. We recognize that the current economic and political environment necessitates reductions to defense budget requests. We have made the necessary adjustments to maintain an overall balance in our defense programs while continuing modernization and development efforts so critical to the success of our deterrent strategy. We cannot, however, ignore the fact that we have been forced to accept a higher level of risk to our security.

Table II.A.2

FY 1989 Amended Department of Defense Budget Long-Range Forecasts
(Dollars in Billions)

	FY 1988	FY 1989	FY 1990	FY 1991	FY 1992
Budget Authority					
Total, Current Dollars	283.2	290.8	307.3	324.3	342.0
Total, Constant (FY 1989) Dollars	292.8	290.8	297.0	303.7	311.3
Percent Change	-2.9	-0.7	2.1	2.3	2.5

Whether or not this higher level of risk proves disastrous depends on our commitment to return to stable and consistent levels of defense funding. I commend the Congress for its role in forging the bipartisan summit agreement on defense funding. The setting of an "agreed-to" defense top line affords the Congress and the Administration an opportunity to work together to end the current budgetary chaos and provide realistic and stable funding for defense programs. We can now focus directly on defense priorities so as not to erode further the significant gains made since 1981. We will only succeed, however, if this "agreed-to" level remains firm, and does not become a base from which additional cuts are made, as has so often happened in the past. I look forward to working in partnership with the Congress to preserve the common defense.

B. DEFENSE MANAGEMENT

1. Introduction

One of our top priorities has been the refining of our management practices to continue ensuring our defense dollars are spent wisely and effectively. The Department of Defense (DoD) meets the challenge of effective management by giving priority to those improvements that will realize the greatest gains. The men and women of the DoD have been extremely successful in meeting this challenge, as the improvements and achievements described in the following pages will show.

2. Management Tools

Two tools that ensure our management improvements are successfully implemented are the DoD Council on Integrity and Management Improvement (DCIMI) and the DoD Management Improvement Plan. The DCIMI coordinates and integrates the implementation of management initiatives throughout the department. The Management Improvement Plan sets out management improvement priorities in a yearly plan that focuses resources and attention on important initiatives. The plan also ensures accountability and tracks our progress toward specific management goals.

a. DoD Council on Integrity and Management Improvement

The DCIMI is designed to pursue and encourage management improvements throughout the Department of Defense. At monthly meetings the DCIMI coordinates and integrates management decisions by bringing together top executives from the Services and OSD. During FY 1987, the council met 11 times and considered 28 issues. On one issue, the DCIMI provided executive leadership and direction to the civilian payroll/personnel systems consolidation effort. This effort will consolidate civilian personnel and payroll systems, resulting in a single personnel system and a single payroll system for each Military Department, and an integrated personnel/payroll system for the Defense Logistics Agency. Other Defense Agencies may choose to use one of the seven systems.

To maintain top management attention on DCIMI initiatives, a follow-up system tracks and monitors the completion of directed actions resulting from the meetings. In FY 1987, there were 34 directed actions. At the end of the fiscal year, 25 of the 34 actions had been completed.

b. The DoD Management Improvement Plan

The FY 1988/1989 Management Improvement Plan reaffirms our commitment to excellence in management. The plan comprises 28 major management initiatives receiving adequate resources and high-level attention. The FY 1988/1989 plan has seven goals: simplify and improve our acquisition process; link the mobilization and surge capabilities of the U.S. industrial base with our warfighting requirements; strengthen financial management direction, coordination, and oversight; strengthen health program management; improve force manpower and personnel programs; improve productivity; and improve the mechanisms for efficient and effective program management. A discussion of our progress in achieving many of these goals follows.

3. DoD Management Reforms

a. Acquisition Management

Improving acquisition remains a major focus of our management reforms. Some of our major efforts are highlighted below.

(1) Acquisition Process

We are continuing to improve our acquisition management system. The Under Secretary of Defense for Acquisition (USD(A)) supervises the acquisition system's performance and directs DoD activities on matters of acquisition policy, procedure, and execution. The revitalized Defense Acquisition Board (DAB), with the USD/A as Chairman and the Vice Chairman, JCS as Vice Chairman, functions as the primary forum for resolving issues, providing and obtaining guidance, and making recommendations. We also have ten DAB Acquisition Committees. These committees support DAB deliberations by identifying and resolving issues and formulating recommendations for DAB consideration.

(2) Acquisition Streamlining

Acquisition streamlining is a major DoD program directed at reducing the time and cost of weapon system acquisition. It seeks to minimize the imposition of unnecessary requirements on system development and to maximize the contractor's flexibility to develop the most efficient and effective weapon systems. We also

seek to minimize our involvement in the contractor's internal management practices and focus more on the final results.

Efforts are under way to encourage early analysis and trade-offs of weapon system cost and performance, identifying the best value for the DoD while preserving the required capability. A recent survey completed on 30 acquisition programs indicated that streamlining is resulting in significant reductions in the time and cost of weapon system acquisition. We have designated flag-level streamlining advocates in each Military Department, and over 2,000 key engineering and contract personnel have attended streamlining training courses.

In a related area, we are expanding our use of the engineering tools -- specifications and standards -- that are developed by the private sector, instead of developing specialized military documents. To date, we have adopted over 4,000 private sector documents for our use and have a goal of adding 350 annually if they meet our needs. Through this, the Nongovernmental Standards Program, we expect to see further improvements in our efficiency to develop new systems.

(3) Commercial Acquisition and Nondevelopmental Items

We are continuing to increase our use of commercial, "off-the-shelf" products to satisfy our needs. Whenever possible, we want to purchase and use items "as is" -- or with only minor modifications -- to avoid the large expenditures associated with developing new systems. Over the years, we have successfully adapted numerous commercial items for our use. Examples include DC-9/C-9 and DC-10/KC-10 aircraft, and the Chevy Blazer/Army commercial utility cargo vehicle.

(4) Value Engineering

Value Engineering (VE) analyzes the function of systems, equipment, facilities, services, and supplies to achieve essential functions at the lowest life-cycle cost consistent with required performance, reliability, quality, and safety.

Our VE program has two elements. One is the in-house activity performed by DoD personnel; the other is the DoD contractor program. The in-house VE program has resulted in monetary benefits of millions of dollars annually. In accordance with the Federal Acquisition Regulation, contractors may submit VE change proposals and share in the savings if we implement them. In FY 1986, over

600 VE change proposals were implemented. Our share of the resulting savings is estimated at over \$450 million.

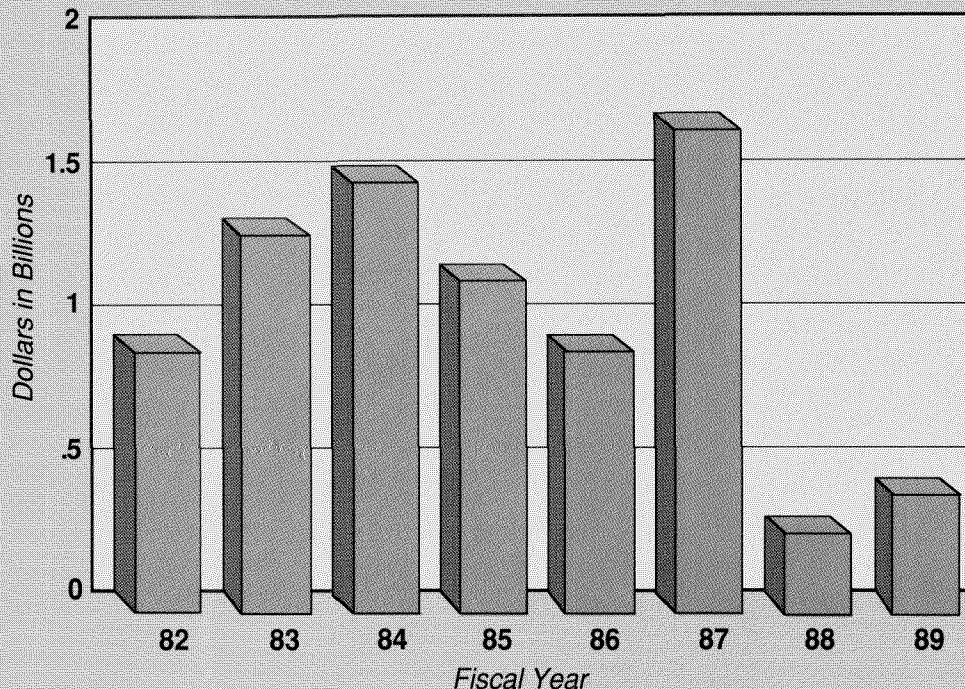
(5) Program Stability

Program stability is of vital concern to the department. To manage effectively, we need consistent guidance and support from both within DoD and from the Congress. The concept of program stability includes several important factors, all of which affect the successful acquisition of a major system. Among these are: a firm development schedule; set specifications; consistent funding; and steady production rates. Program stability contributes to reducing total program costs while facilitating long-range planning. Initiatives that support increased program stability include multiyear procurement (MYP), baselining, and milestone authorization.

MYP is a time-proven method for ensuring program stability, and has been responsible for significant savings since its inception in 1981. With MYP we are achieving savings through

Chart II.B.1

Multiyear Procurement Savings¹



1. Estimated savings based on programs approved by Congress during FY 1982-1988

economical buys and the reduced uncertainty inherent in single year funding. The Packard Commission supported our efforts for increasing MYP funding, and I urge the Congress to continue its support. DoD submitted nine FY 1988/1989 MYP candidate programs with an initial estimated savings of \$932 million. Of these, four of six FY 1988 requests were approved, with an estimated savings of \$244 million, while the remaining three requests for FY 1989 were deferred. Chart II.B.1 depicts the savings from MYP since FY 1982. The six requests being submitted for FY 1989 are: modernization of the CH-47 Chinook helicopter and purchase of the F-16 and AV-8B aircraft; Defense Meteorological Satellite program components; the MLRS; and the UHF follow-on satellite. Potential savings total \$869 million.

Baselining employs a formal agreement between managers at each level of program management to establish very specific objectives for each program. These objectives include the functional specifications, costs, schedules, and other factors critical to each individual program. Deviations from these objectives trigger a management review to either restore the program to the baseline parameters, revise the baseline agreement, or cancel the program. We are completing baseline agreements for approximately 90 programs in full-scale development or production.

Milestone authorization, in which the Congress authorizes funding for a complete acquisition phase, also enhances program stability. The Congress authorized milestone funding for four programs: the Mobile Subscriber Equipment; the Trident D-5 Missile; the Army Tactical Missile System (ATACMS); and the T-45 Aircraft Training System. Together they represent a mutual commitment to program stability of approximately \$19.9 billion.

(6) Joint Program Management

Joint programs promote reduced unit costs, meet interoperability requirements, and improve logistical efficiency. We use the Joint Requirements Oversight Council (JROC), an instrument of the Joint Chiefs of Staff, to identify potential joint military requirements and candidates for joint research and development, and to resolve Service requirements issues that may arise after such programs are initiated. There are over 150 joint programs in various stages of development and procurement. For example, the Advanced Medium Range Air-to-Air Missile (AMRAM) will be compatible with the fire/weapons controls system of the Air Force F-15 and F-16 and the Navy F-14 and F/A-18, in addition to the fighter aircraft of NATO countries like Germany and the United Kingdom. Using an identical missile saved \$800 million in development costs, and reduced procurement costs by \$2 billion. Also, savings of \$600 million in development costs and \$1.2

billion in production costs have been realized by the joint Navy/Air Force effort to design and produce the High Speed Anti-Radiation Missile (HARM). HARM is compatible with multiple aircraft -- the Navy's A-7E, F/A-18, A-6, and the Air Force's F-4G. The HARM system will be used by Germany on the Tornado aircraft.

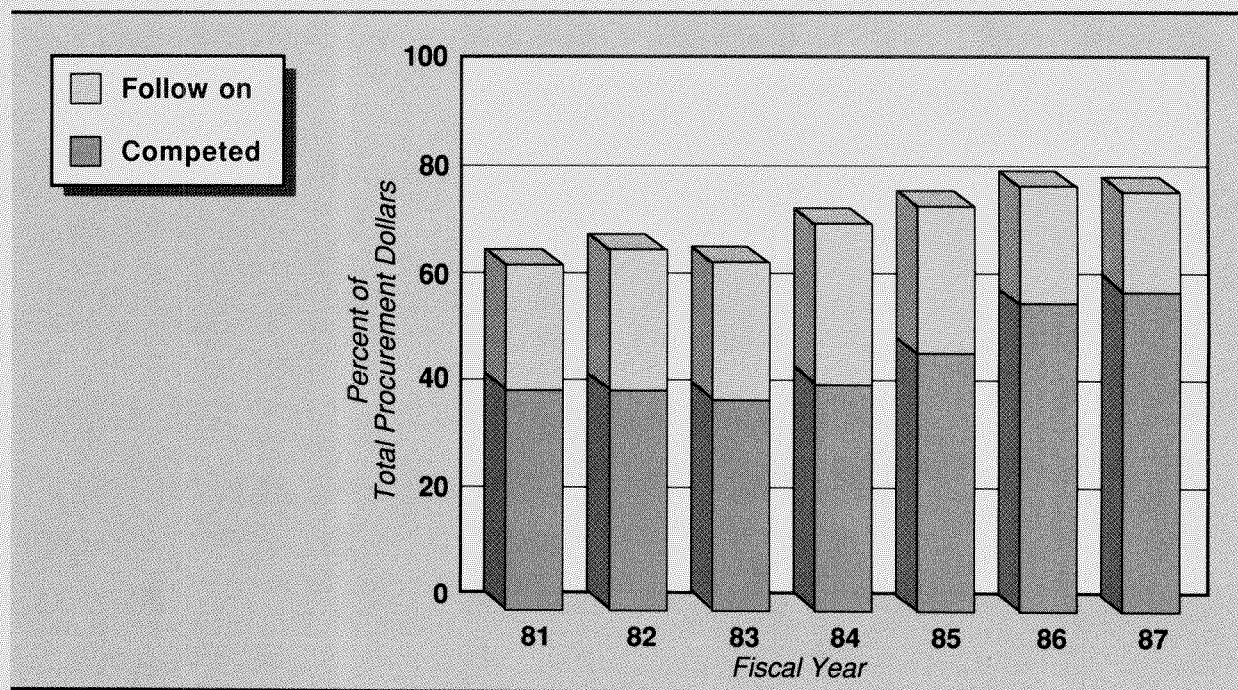
(7) Competition Reforms

Competition helps ensure that the right quality of goods and services are acquired at a fair price. The department-wide rate of competed procurement dollars in FY 1987 was \$82 billion, or over 60 percent of total procurement, with another \$24 billion, or

Chart II.B.2

Procurement Dollars

(Competed and Follow-on)



nearly 18 percent of contract dollars being follow-on actions to initially competed contracts. As shown in Chart II.B.2, our rate of competed procurement dollars is 5.5 percent higher than last year and 51.5 percent higher than in FY 1983.

In addition to price and performance, we are focusing on the quality of goods and services as well as the quantity of competition. We have developed programs to encourage more effective

competition and promote the use of commercial products. Through our cadre of competition advocates, we are enhancing the opportunity for competition and identifying and eliminating impediments. We are supporting this endeavor with an automated system specifically designed for the needs of competition advocates. We expect steady and continued improvement in this area by continuing to promote appropriate second-sourcing of major systems and components, and advanced planning for competition.

(8) Spare Parts Reforms

The results of our Spares Management Improvement program and the resources applied to it provide clear evidence that we are meeting our goal of making meaningful and lasting changes in the way we acquire and manage spare parts. Spare parts reforms have produced savings and cost avoidances of \$1.5 billion in FY 1987, for a total of \$5.6 billion since the program was begun in FY 1984.

One of the most important elements of our spares improvement program is called "breakout," where parts designated for purchase from a prime manufacturer are screened to identify other sources of procurement. In the last four years, 1,033,000 parts have been screened. Some 222,147 of those were designated for purchase from the actual manufacturer, while 226,746 were identified for competitive procurement. The breakout program is responsible for approximately \$572 million in savings and cost avoidances in FY 1987.

During the past year, we have also initiated new pilot programs to shorten the procurement lead time for spare parts, and to place more emphasis on spare parts management earlier in the weapon system design and development process. We are continuing to examine and apply current technology to improve spare parts management. For example, we are pursuing aggressive ADP programs involving the automation of our technical data repositories, flexible manufacturing to allow economical production of parts in small quantities, and artificial intelligence to streamline our parts breakout program.

b. Financial Management

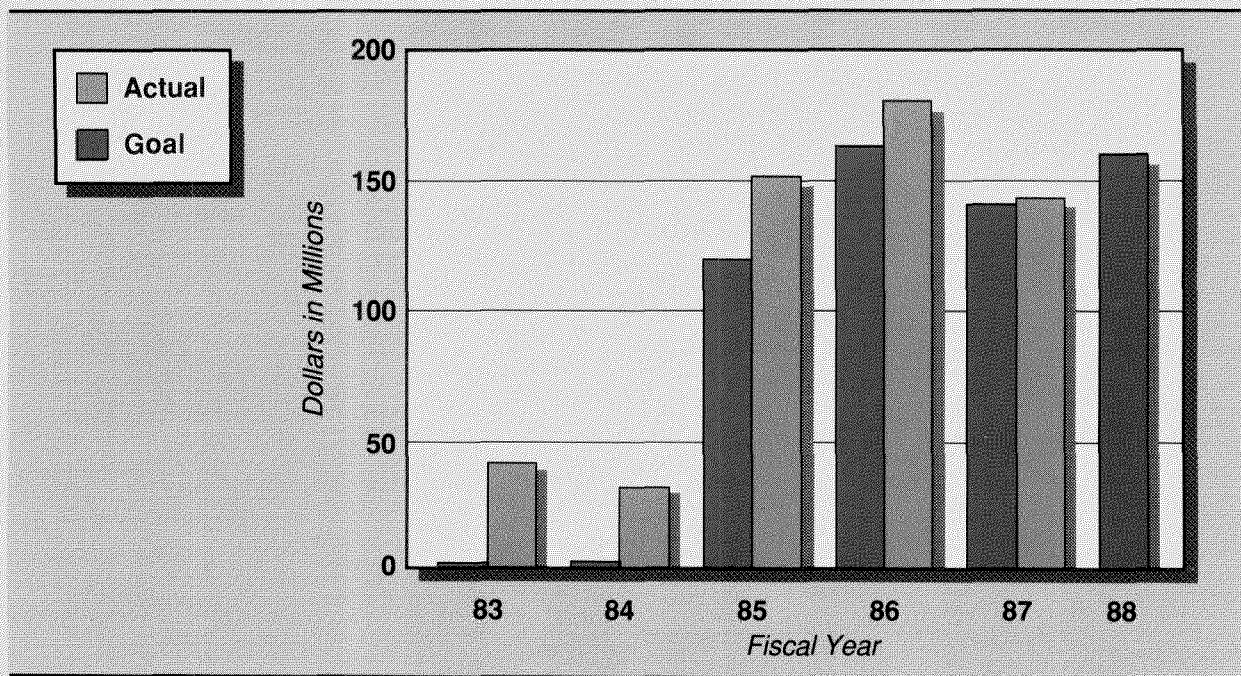
Proper financial management is critical to the success of our management improvement efforts. We have placed particularly great emphasis on improving this area over the past seven years and are achieving positive results.

(1) Financial Management Systems

We continue making significant progress in upgrading our financial management and accounting systems. We have two objectives: first, to bring all operating accounting systems and subsystems into compliance with prescribed accounting principles, standards, and related requirements; second, to consolidate all currently operating accounting systems and subsystems into four integrated accounting systems, one each for the Army, Navy, Air Force, and the Defense Agencies. Since the 1982 Federal Managers' Financial Integrity Act, we have reduced the number of accounting systems not meeting prescribed principles, standards, and related requirements from 98 to 32, a 67 percent reduction. In addition, we have reduced the total number of operating accounting systems from 154 to 94, a reduction of 39 percent. Current projections are that nine more accounting systems or segments will be eliminated in FY 1988, and nine more in FY 1989.

Chart II.B.3

DOD Cash Management Initiatives Savings to the Treasury



(2) Cash Management

We have implemented initiatives to improve all phases of cash management, focusing on reduced cash holdings, improved cash receipts, and better timing of disbursements. In FY 1987 there were 44 DoD cash management initiatives that produced \$144 million in benefits. There are 58 initiatives with an estimated \$161 million in savings for FY 1988. Since FY 1983, DoD cash management improvements have accounted for \$550 million in interest savings to the Treasury (see Chart II.B.3).

(3) Debt Collection

Collection of debts owed to the government is accomplished through voluntary repayments, salary offset, federal income tax refund offset, and the use of collection agencies. As part of this effort, we have collected over \$7 million in delinquent student loans for the Departments of Education and Housing and Urban Development through salary offset of DoD employees; initiated over 22,000 salary offsets of DoD personnel valued in excess of \$40 million for the Veterans Administration; and collected over \$17 million owed DoD through offset of federal income tax refunds. Additionally, we are the government-wide agent that matches federal agencies that are owed money with agencies that employ the debtor.

Our current debt management plan comprises 66 DoD initiatives designed to improve debt collection throughout the department. These initiatives are expected to reduce outstanding delinquent receivables by 8 percent in FY 1988.

c. Internal Management Control Program

Our Internal Management Control (IMC) program requires managers to identify problems that could result in waste, fraud, or mismanagement, and to develop and implement corrective action plans. The IMC program remains a top management priority and a key vehicle for improving management throughout DoD. We have enjoyed numerous successes in correcting management problems since the program's inception in FY 1983. In fact, by the end of FY 1987, we had corrected 269, or 85 percent, of the problems identified through FY 1986. Of these corrective actions, 52 were completed this year.

For example, we discovered that some military installations did not have adequate control of personally owned weapons;

registration procedures were weak and policies were inconsistent. This deficiency was corrected by establishing uniform policies, instituting tighter procedures for the retention and registration of personal firearms of individuals living in government quarters, and closely monitoring for compliance.

Strengthening the department's internal controls has also resulted in lower prices paid for spare parts and better methods of identifying newly manufactured items.

d. Contract Auditing

The Defense Contract Audit Agency (DCAA) performs all contract auditing and provides accounting and financial advisory services in connection with the negotiation, administration, and settlement of contracts and subcontracts for all DoD procurement and contract administration activities. DCAA audits approximately 12,000 defense contractors, and during FY 1987 these audits produced savings of approximately \$8.7 billion.

Areas of audit emphasis often change to reflect recent DCAA audit findings, the needs of the acquisition community, and congressional concerns. During the last year, DCAA has undertaken several major initiatives that have resulted in a redirection of our audit effort. In particular, our increased audit support for defective pricing reviews is in direct response to concerns that defense contractors do not provide DoD with current, accurate, and complete cost data in their proposals. DCAA has also placed increased emphasis on performing estimating system surveys to reduce the potential for defective pricing in cost proposals, and increase the overall contractor contract price estimating integrity.

Our contract audits have produced some impressive results. For example, our evaluation of a pension forecast resulted in government savings of \$107.1 million. A review of actuarial assumptions indicated the contractor had underestimated pension fund earnings and overstated salary escalation estimates. Further review disclosed that pension costs were assigned to inappropriate accounting periods. The contractor agreed to modify pension costs. In another instance, a review of cost growth of certain materials resulted in government savings of \$33 million. The contractor consistently proposed a cost growth factor of 2 to 5 percent. The auditors concluded these factors were based on noncurrent and inaccurate historical data. Current studies were available that showed a 0.2 percent cost growth rate. The contractor agreed and eliminated the use of the inaccurate cost growth factor.

e. *Inspector General*

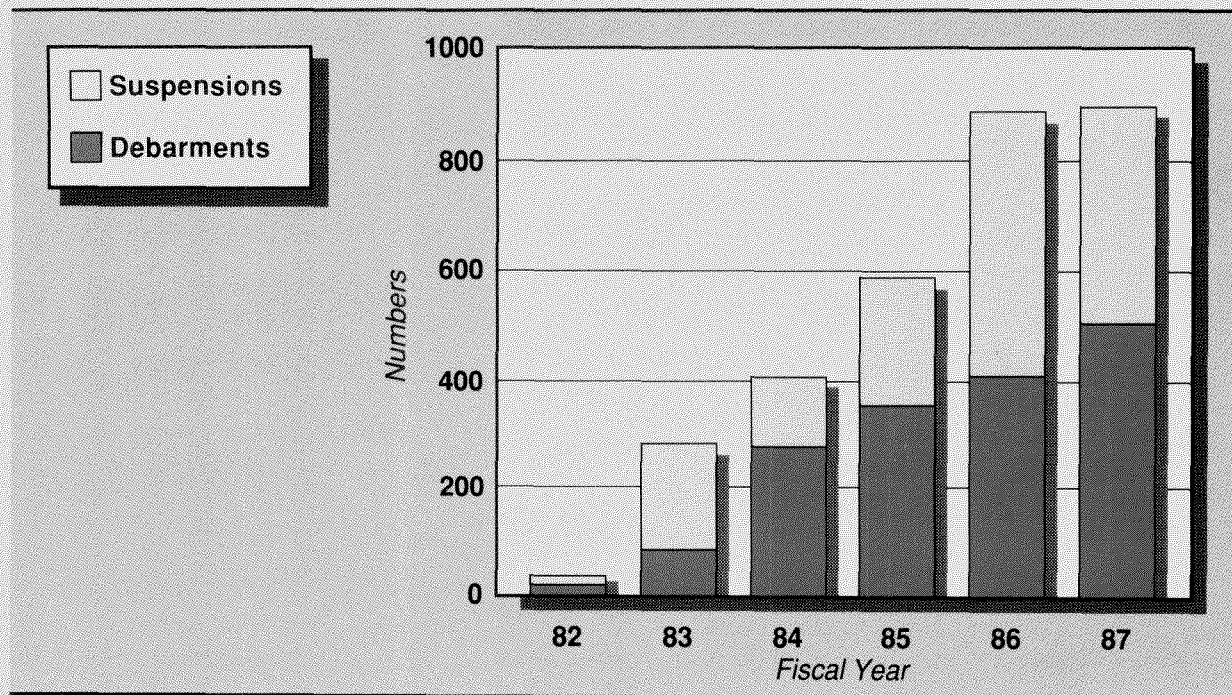
I strongly support our Inspector General (IG) efforts as they pay handsome dividends across the spectrum of defense operations.

Functional inspections by the IG concentrated on areas such as management of hazardous waste, productivity, per diem, fuels, and contract administration services. One inspection found that a defense component had developed four separate but essentially duplicate programs for assessing the efficient use of personnel resources. Integrating these programs could save up to \$3 million.

Since FY 1982, our IG auditors have issued over 950 audit reports identifying billions in savings and cost avoidances. Over 100,000 internal audit recommendations made by DoD audit and internal review organizations have been adopted by DoD managers.

Chart II.B.4

Number of Suspensions and Debarments



The impact is widespread and significant, but often cannot be readily quantified. The DoD has achieved \$9.7 billion in savings

from some of those corrective actions, including \$3.0 billion from IG reports and \$6.7 billion from Service audit reports.

Since FY 1982, DoD investigators have generated nearly half a billion dollars in recoveries, fines, penalties, and restitutions. Investigations continue utilizing two powerful administrative tools -- suspension and debarment of contractors -- to counter procurement process abuses. The number of suspensions and debarments remains high, as shown in Chart II.B.4.

Our DoD Hotline has received over 45,000 calls and letters since FY 1982, resulting in \$65 million in recoveries and reported savings. Special Inquiries has conducted over 1,200 noncriminal investigations since FY 1982, resulting in the strengthening of many of the department's management controls and policies, and reaffirming the notion that individuals are accountable for their actions.

f. Information Resources Management

Information technology has long been an integral part of most aspects of DoD operations. To promote the effective and efficient use of information technology, we have established a Department of Defense Automated Information System (AIS) Strategic Planning Policy. This policy requires DoD Components to develop an annual strategic AIS plan highlighting appropriate planning goals and serving as the basis for budget requests. It also requires the Components to ensure that AIS mobilization plans are in place. Further, we revised the DoD Computer Programming Language policy by limiting the number of programming languages used within the Defense Department and promoting the use of Ada for all DoD software development.

We are making substantial progress in increasing the level of competitive information technology acquisitions. Based on the contract dollar value, DoD's competitive procurements of automated data processing (ADP) equipment increased from 39 percent in FY 1984 to nearly 70 percent in FY 1987. We anticipate this trend will continue.

We are continuing programs to provide Information Resources Management education and training to senior- and intermediate-level executive users of information and information technology. The National Defense University teaches courses that provide an educational background for intermediate- and senior-level military and civilian personnel in the acquisition and management of microcomputing-based technology and applications. Also, courses have been established to improve the application of ADP internal

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e. *Inspector General*

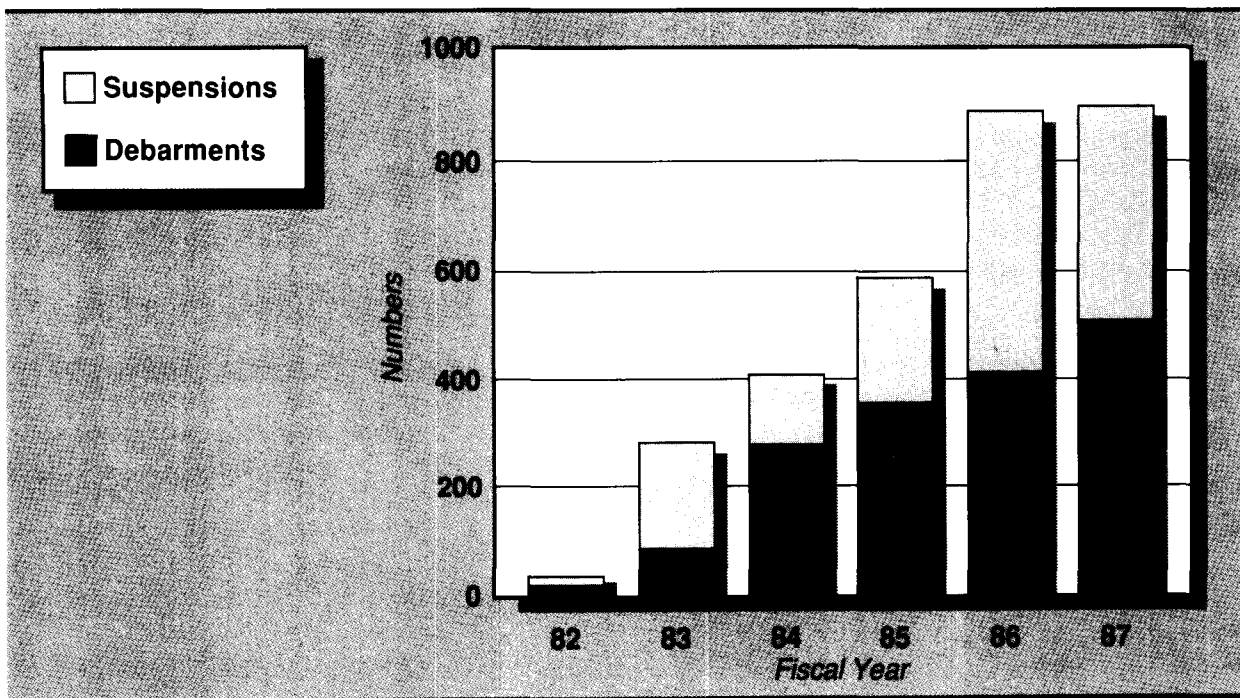
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Chart II.B.4

Number of Suspensions and Debarments



The impact is widespread and significant, but often cannot be readily quantified. The DoD has achieved \$9.7 billion in savings

controls and strengthen life cycle management by ADP program managers.

g. Productivity

We are firmly committed to improving DoD productivity. Our Productivity Improvement Plan for FY 1989 has been expanded to include over 437,000 military and civilian personnel managing DoD functions and programs valued at approximately \$46 billion. By 1992, we will further expand our productivity program to include approximately one million DoD personnel, with the objective of improving their productivity by an average of 3 percent each year. We are also enhancing productivity measurement by establishing unit cost measures for functions identified for improvement under the President's productivity initiative. To support these plans, we have an aggressive productivity improvement process that seeks to raise awareness, recognize successes, and develop and refine the tools that support increased defense productivity.

The efforts of our DoD Task Force on Productivity in the Support Operations, which was established in 1986, have paid off. The FY 1989 Productivity Improvement Plan incorporates many of the Task Force initiatives. One of these, the Productivity and Quality Team (P&Q) concept, uses existing management structures to create interlocking teams of line managers at all levels. These teams work by taking quick action to remove barriers and impediments to productivity and quality improvement.

On January 27, 1988, DoD held its Fifth Annual Productivity Excellence Award Ceremony, honoring 51 men and women whose combined efforts resulted in total first-year savings of nearly \$335 million. To date, 774 individuals have been recognized for their contributions to productivity improvements, resulting in savings exceeding \$1 billion.

We give our managers the tools and techniques to make improvements. We use the Efficiency Review process, which identifies essential work functions and uses them to determine efficient staffing requirements. Over 92 efficiency reviews were completed in FY 1987, with a reduction of 1,419 personnel spaces and savings of \$84 million.

We are continuing our Productivity Enhancing Capital Investment (PECI) program to improve the efficiency of operations through the use of modern technology. Investments planned for FY 1989 of \$234 million are expected to return approximately \$15 for each \$1 invested.

To increase quality and productivity further, we use a "total quality management approach." Our approach combines work force motivation, achieved through such techniques as quality circles and participatory management, with statistical process control, which identifies and removes errors from the process in lieu of relying on final quality inspections. It works. For example, application of total quality management at one Naval Air Rework Activity reduced rework time by 400 hours per aircraft. We also support positive incentives for our work force. Gain sharing systems within DoD are returning dollar rewards to employees who exceed preestablished efficiency and quality goals. For instance, the Defense Logistics Agency generated savings of \$659,000 as a result of employees exceeding established performance standards by 18 percent. Half of these savings were returned to our employees.

4. Reorganization and Acquisition Improvement Acts of 1986

While we are pursuing management improvements throughout DoD, the Congress has passed legislation to enhance this process. Two recent pieces of legislation that we are actively implementing are the Goldwater-Nichols DoD Reorganization and the DoD Acquisition Improvement Acts of 1986.

We have moved aggressively to ensure effective implementation of the DoD Reorganization Act, and are proceeding at an encouraging pace. Thus far, we have vested management responsibility for the Joint Staff in the Chairman of the Joint Chiefs of Staff and designated him as the principal military advisor to the President, Secretary of Defense, and the National Security Council. He is also charged with providing the Secretary of Defense advice on the extent to which the Service and agency program budget submissions conform to our warfighting priorities. Furthermore, we created the position of a Vice Chairman, Joint Chiefs of Staff, and strengthened the command authority of the commanders of the unified and specified commands. We have also established systems that will be used to evaluate the preparedness of the unified and specified commands and the combat support agencies to carry out their assigned missions, including participation by combat support agencies in joint training exercises.

In addition, major military department functions, including acquisition, audit, comptroller, information management, inspector general, legislative affairs, and public affairs have been consolidated under the Service Secretaries. We have also completed major management studies of the Office of the Secretary of

To increase quality and productivity further, we use a "total quality management approach." Our approach combines work force motivation, achieved through such techniques as quality circles and participatory management, with statistical process control, which identifies and removes errors from the process in lieu of relying on final quality inspections. It works. For example, application of total quality management at one Naval Air Rework Activity reduced rework time by 400 hours per aircraft. We also support positive incentives for our work force. Gain sharing systems within DoD are returning dollar rewards to employees who exceed preestablished efficiency and quality goals. For instance, the Defense Logistics Agency generated savings of \$659,000 as a result of employees exceeding established performance standards by 18 percent. Half of these savings were returned to our employees.

4. Reorganization and Acquisition Improvement Acts of 1986

While we are pursuing management improvements throughout DoD, the Congress has passed legislation to enhance this process. Two recent pieces of legislation that we are actively implementing are the Goldwater-Nichols DoD Reorganization and the DoD Acquisition Improvement Acts of 1986.

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controls and strengthen life cycle management by ADP program managers.

g. Productivity

We are firmly committed to improving DoD productivity. Our Productivity Improvement Plan for FY 1989 has been expanded to include over 437,000 military and civilian personnel managing DoD functions and programs valued at approximately \$46 billion. By 1992, we will further expand our productivity program to include approximately one million DoD personnel, with the objective of improving their productivity by an average of 3 percent each year. We are also enhancing productivity measurement by establishing unit cost measures for functions identified for improvement under the President's productivity initiative. To support these plans, we have an aggressive productivity improvement process that seeks to raise awareness, recognize successes, and develop and refine the tools that support increased defense productivity.

The efforts of our DoD Task Force on Productivity in the Support Operations, which was established in 1986, have paid off. The FY 1989 Productivity Improvement Plan incorporates many of the Task Force initiatives. One of these, the Productivity and Quality Team (P&Q) concept, uses existing management structures to create interlocking teams of line managers at all levels. These teams work by taking quick action to remove barriers and impediments to productivity and quality improvement.

On January 27, 1988, DoD held its Fifth Annual Productivity Excellence Award Ceremony, honoring 51 men and women whose combined efforts resulted in total first-year savings of nearly \$335 million. To date, 774 individuals have been recognized for their contributions to productivity improvements, resulting in savings exceeding \$1 billion.

We give our managers the tools and techniques to make improvements. We use the Efficiency Review process, which identifies essential work functions and uses them to determine efficient staffing requirements. Over 92 efficiency reviews were completed in FY 1987, with a reduction of 1,419 personnel spaces and savings of \$84 million.

We are continuing our Productivity Enhancing Capital Investment (PECI) program to improve the efficiency of operations through the use of modern technology. Investments planned for FY 1989 of \$234 million are expected to return approximately \$15 for each \$1 invested.

Defense, Defense Agencies, and DoD Field Activities, and are evaluating their recommendations for implementation.

Similarly, despite the complexity of the changes involved in the Defense Acquisition Act, significant strides have been made. We have issued policies and procedures that provide for a single, uniform Defense Acquisition System under the oversight of the USD(A), and streamlined the DoD acquisition structure by establishing Service Acquisition Executives to administer the acquisition programs of the Military Departments. We are also requiring DoD Components to enhance long-range planning, identify trade-offs between cost and performance, use prototyping for critical components, and maximize the use of "off-the-shelf" products. These changes in the defense acquisition system build on, and complement, improvements that have been made over the past seven years.

5. Conclusion

Management improvement in the Department of Defense is a continuing effort that requires constant attention and resource support. We have set priorities and vigorously pursued management improvement objectives throughout DoD, and our successes in spare parts reform, financial management, and productivity enhancement have been highlighted in this chapter. We are also continuing to implement programs such as A-76. The A-76 program stimulates competition between in-house work forces and private sector firms, to ensure the most efficient and economical supply of support services. Through this program and others, I am personally committed to improving DoD management, and ensuring that we preserve the common defense in the most efficient manner possible.

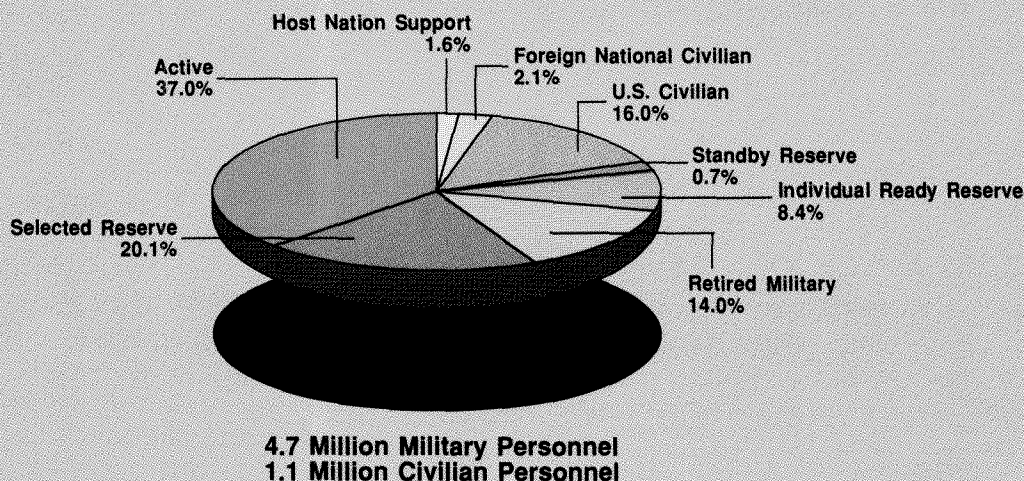
C. MANPOWER

1. The Total Force

Our most important defense resources are the men and women who comprise the "Total Force" that meets our defense manpower requirements. These requirements are derived directly from our force structure which, in turn, is developed to respond to the diverse threats to our national security. We must remember, however, that it is our highly skilled and motivated people who are the heart of that force structure. Even in this atmosphere of constrained defense resources, we are determined to provide effective training programs and a high quality of life for our servicemen and women.

Chart II.C.1

Composition of the Total Force ¹



1. Percentages Do Not Add To 100 Percent Due to Rounding

Our Total Force, whose composition is shown in Chart II.C.1, is designed to address a continuum of possible utilization scenarios. These extend from peacetime operations, through small contingencies, to large-scale conflicts requiring selective, partial, full, or total mobilization. The following sections discuss the role of each of the

Total Force categories and some of the issues involved in managing them.

a. The Volunteer Concept versus Conscription

Over the last 14 years, we have successfully manned our forces with volunteers. Despite this success, there remain those who contend that some form of conscripted national service is necessary. The evidence, however, shows that a return to the draft would increase the cost of an equally effective force by as much as \$2.5 billion each year. Furthermore, while changing demographics and a growing economy make recruiting more difficult, demographic trends are not so unfavorable that the Services will be unable to attract men and women in the numbers and quality required. Although the size of our youth population reached its peak in 1979, that was the last year the Services failed to achieve their accession goals, and they have met their goals with higher quality personnel each year since 1981. To continue this success, however, the Congress and the Department of Defense must provide adequate compensation for our people.

b. Active Component Military Manpower

The Total Force's Active Component serves in the United States and around the globe, and is capable of responding on short notice to defend U.S. interests.

(1) Active Component End Strength

We had requested in our FY 1988/89 budget submission end-strengths of 2,172,000 for FY 1988 and 2,184,000 for FY 1989. Although the Congress approved an end-strength of 2,172,000 for FY 1988, our active component end-strength will be 2,138,000 -- a 1.6 percent reduction from approved levels.

(2) Manpower Requirements

Our goal is to use the least costly form of manpower consistent with our security requirements. Accordingly, we size our active forces to man that part of our force structure necessary for rapid response to an array of potential contingencies.

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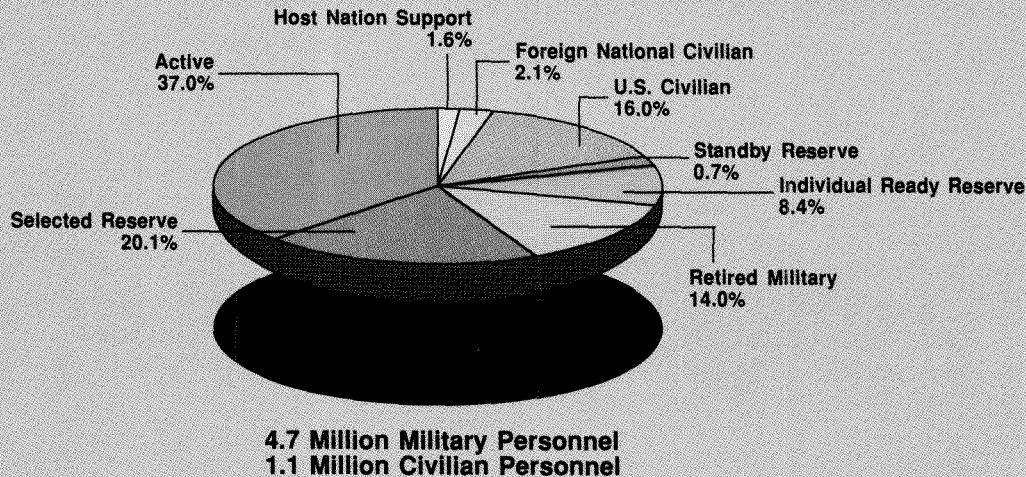
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(a) Officer Requirements

The Fiscal Year 1987 National Defense Authorization Act mandated officer reductions of 1 percent in FY 1987, 2 percent in FY 1988, and 3 percent in FY 1989 from those levels assigned as of September 30, 1986. The FY 1988 Defense Authorization Act rephased the remaining 5 percent officer reductions to 1 percent in FY 1988, 2 percent in FY 1989, and 2 percent in FY 1990, providing we certify that a 2 percent reduction in FY 1988 would cause severe officer management problems, and submit DOPMA relief legislation which would allow us to shape the officer force more prudently. Both of those requirements were complied with. Furthermore, we provided a report to the Congress on February 1, 1988, which explained that the FY 1988 officer reduction of 1 percent was apportioned to the Services based on the Officer Requirements Report submitted last spring.

By the end of FY 1988, the department will have actually reduced officer strength by 2.8 percent, since the FY 1987 Defense Authorization Act eliminated planned growth previously approved by the Congress for FY 1987 and FY 1988. The department appreciates the deferral of 1 percent of the original 1988 cut and the opportunity to study the subject more fully. In a report planned for submission in March 1988, the officer growth issue will be explained in sufficient detail to convince the Congress of the necessity to repeal the remaining 4 percent reduction.

(b) General and Flag Officer Requirements

A comprehensive legislative proposal establishing a new framework for managing general and flag officers was submitted to the last three Congresses, but has not been enacted. Recognizing the Congress's continuing concern with substantiating our requirements for general and flag officers, we have commissioned an outside company with extensive experience in senior level job measurement to validate all DoD general and flag officer requirements. The study will also provide a uniform methodology and framework for the Services to validate future requirements.

(c) Manpower, Personnel, Training, and Safety

Just as weapon systems designs are subjected to rigorous life cycle analyses, requirements for manpower resources must also be examined early enough in the acquisition cycle to ensure that proposed man-machine systems are structured in the most cost-effective manner possible. We are strengthening our ability to assess the total manpower, personnel, training, and safety (MPTS) implications of future weapons systems and equipment. Military,

civilian, and contractor requirements are being rigorously reviewed in conjunction with various acquisition milestones. These initiatives are designed to improve our ability to address MPTS implications early in the acquisition process, thereby ensuring that manpower provides maximum combat capability at an acceptable cost.

(d) Recruiting

In recent years, the Congress, the Military Services, and the Administration have worked together to overcome the extremely unfavorable military manpower conditions of the late 1970s. During that period, the cumulative effects of inadequate compensation and underfunding of enlistment and reenlistment bonuses made it virtually impossible to attract and retain quality personnel. Since that time, a sense of pride and dignity has been restored to the military profession. Military pay and benefits were returned to competitive levels, the Services were provided adequate recruiting resources, and the quality of military life was improved. As a result, the Services are meeting their recruiting objectives with young men and women of unprecedented high quality. Recruit quality is traditionally measured in terms of educational attainment and enlistment test

Table II.C.1

Quality and Numbers of Enlisted Active Duty Accessions ¹

(Numbers in Thousands)

	Quality Indices 1987			Accessions		
	Percent High School Graduates	Percent Average or Above Aptitude		FY 1987	FY 1988 ² Planned	FY 1989 ² Planned
Army	91.1	96.1		133.0	131.3	136.0
Navy	90.6	89.8		92.9	94.2	90.1
Marine Corps	98.1	99.8		34.9	36.3	35.4
Air Force	99.0	99.8		56.0	51.4	45.6
Average	94.7	96.4	Total	316.8	313.2	307.1

¹ Includes prior service and nonprior service accessions.

² Estimates.

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scores. A high school diploma has been shown to be the best single indicator of the probability of an individual completing their initial enlistment, while enlistment test scores predict success in training and job performance.

FY 1987 was an outstanding year for recruiting. All Services met or exceeded their enlistment objectives. Table II.C.1 shows quality results for 1987, as well as enlisted accessions for FY 1987 and the planned recruiting levels through FY 1989.

With a strong economy and a shrinking youth pool available for military service, the Services are facing significantly more difficult recruiting market conditions. With the Congress's continued support, however, we are confident that we can continue meeting our military manpower needs with quality volunteers.

(3) Personnel Management

(a) Enlisted

Two important indicators of our enlisted force's status are rate of retention, and average number of years a military member has served. Both of these measures are at satisfactory levels. Between FY 1980 and FY 1988 the retention rate has increased from 80.7 to 84.2 percent, and the average number of years of service has risen from 5.55 to 6.25 years over the same period. The principal reason for the increase in retention rates and average years of service has been restoration of basic military compensation to competitive levels. The two incentives most responsible for attracting and retaining high-quality technicians for critical shortage skills are the enlistment and selective reenlistment bonus programs.

To continue meeting military manpower requirements on a voluntary basis, we must offer competitive compensation, adequate family support, reasonable living and working conditions, and assistance programs for post-secondary education.

(b) Officers

While officer retention is generally stable, retention problems remain in two specific officer communities: nuclear trained naval officers and aviators. Although there still exists a shortfall of nuclear trained naval officers, we project the current mid-grade shortage of 22 percent to be reduced to approximately 12 percent by

the end of FY 1992 due to the enhanced Nuclear Officer Incentive Pay authorized by the Congress in 1986.

The shortage of aviators has become significant. The demand for pilots in commercial aviation is projected at 4,000 to 7,000 annually well into the next decade. Thus, we anticipate this shortage will continue for the Navy and include the Air Force by the end of FY 1989. High pilot losses and persistent shortages in certain aviation communities jeopardize combat readiness. To remain competitive and retain these critically needed officers, the existing monetary incentives (Aviation Career Incentive Pay (ACIP), and Aviation Officer Continuation Pay (AOCP)), along with other quality-of-life initiatives, must be maintained. We are currently studying other measures that may be useful in solving this problem.

As noted earlier, officer reductions beyond the initial increment taken in accordance with the FY 1987 National Defense Authorization Act will reduce combat capability. In particular, a 2 percent reduction in FY 1988 would have caused severe personnel management problems. Therefore, we have exercised the authority granted in the FY 1988 and FY 1989 DoD Authorization Act to take a 1 percent reduction in FY 1988. If the officer reductions are not modified or repealed, the proposed modifications to existing statutes recently sent to the Congress will be required to alleviate personnel management problems. In general, these problems result from DOPMA, which constrains our ability to discharge or retire involuntarily significant numbers of officers in other than the most junior grades. Furthermore, the inability to plan or control careers due to arbitrary cut-backs is being perceived as a breach of faith by the officer corps, which may lead to further problems with retention in critical skill categories.

(c) Implementation of Joint Officer Personnel Policy

The Goldwater-Nichols Department of Defense Reorganization Act of 1986 contained the most extensive legislation concerning joint officer personnel management in history, and poses the most complex implementation requirements since the Defense Officer Personnel Management Act of 1980. During the past year, we have made significant progress in implementing the provisions of Title IV (Joint Officer Personnel Policy) of the Act.

We have devoted considerable effort to identifying policies and procedures necessary to effect the provisions of the Act. Pending publication of formal directives, policy memoranda have been issued concerning the following areas of joint officer personnel management: assignments; promotion objectives and procedural issues; education and training; nomination and selection for the joint specialty; designation of critical occupational specialties; and career

monitoring considerations. A list of 8,452 joint duty assignments has been published, including 1,000 critical joint duty assignments to be filled by officers who have been awarded the joint specialty. A Senior Military Schools Review Board composed of retired general and flag officers conducted a comprehensive review of professional military education programs. The Board's recommendations were provided to the Chairman of the Joint Chiefs of Staff, and appropriate changes are already being implemented. In addition, we have developed the design concept for a joint duty assignment management information system to assist in managing the joint duty assignment list and implementing the extensive career oversight and reporting requirements entailed in the Act.

For us to implement the provisions of Title IV without compromising readiness and officer career development, we submitted in April 1987 a legislative initiative package that proposed modifications to tour length requirements, joint specialist designation rules, promotion monitoring requirements, and other specific problem areas. Although some of our recommended changes were approved in the FY 1988 National Defense Authorization Act, others were not included in the final legislative package. These changes are needed to reconcile the Act's intent with other considerations -- such as overseas tour constraints -- which impose competing requirements upon our personnel management system.

The Act also requires us to report to the Congress, for each fiscal year, certain statistical measures and personnel actions accomplished in the area of joint officer management. In certain categories, we have only limited data to report for FY 1987 because of the requirement to define joint officer management policies prior to initiating action on individual officers. For example, very few officers had been designated as joint specialists by the end of FY 1987 because of the need to develop rules and procedures for their recommendation and selection, as well as applicable waiver processes. For the same reason, we have no FY 1987 statistics to report concerning assignment of officers subsequent to selection for the joint specialty.

Other statistics that we can provide for FY 1987 reflect, of necessity, transitional data that are not necessarily representative of joint officer management programs in the steady state. The vast majority of the officers currently assigned to joint duties were selected for these assignments prior to the DoD Reorganization Act's passage on October 1, 1986. The Act's provisions have already had a significant effect on the way we select and assign officers to joint duty positions, and we expect that the characteristics of officers selected subsequent to the enactment may differ from those who were selected prior to the date.

Table II.C.2

Selection of Officers for Award of the Joint Specialty (1987)

Service	Type I	Type II	Type III	Type IV	Total
Army	1	—	3	1	5
Navy	—	—	—	—	—
USMC	—	—	—	—	—
USAF	1	1	1	1	4
DOD	2	1	4	2	9

Note: TYPE I includes officers who have completed both a joint military education course and a subsequent joint duty assignment. TYPE II includes officers who have completed both the joint education and assignment prerequisites, but required a waiver for the sequence of the prerequisites. TYPE III includes officers who have completed a joint duty assignment, but required a waiver for the joint education course. TYPE IV includes officers who completed a joint education course, but received a waiver for completing a full joint duty assignment.

This issue is particularly important in considering promotion rate objectives for officers in joint duty assignments. We believe very strongly that the most qualified officers should be selected for promotion, and that less qualified officers should not receive enhanced promotion opportunity simply because they have had a joint duty assignment. Thus, we view achieving the statutory promotion objectives as being fundamentally an assignment selection issue. The challenge is to assign highly competitive officers to joint duties so our promotion objectives will be met. Nevertheless, there will be a transition period of two to three years before we can say with confidence that most officers in joint duty assignments have been selected under the new standards. The promotion statistics cited in Appendix B, Table 5 indicate that, in many cases, we are already meeting promotion objectives for officers in joint duty assignments. In other cases, small changes in the numbers of eligible or selected officers in certain competitive categories would yield substantial variances in promotion rate comparisons. For categories in which the objectives were not achieved in FY 1987, we expect to improve promotion rates by assigning competitive replacement officers as incumbents depart.

(d) Equal Opportunity in the Military

Since the end of FY 1980, the total number of military women has increased by over 28 percent, to more than 49,500. The number of women officers alone has increased by more than 10,600, or by 49 percent. Today more than 220,000 officer and enlisted women comprise over 10 percent of the active force. These numbers are expected to continue growing as more and more women recognize the career opportunities that are available to them in the military service.

Military service continues to attract representative numbers of minorities. The minority officer corps is of special significance. Since FY 1980, the minority commissioned officer population has grown by close to 10,000, or by 43 percent. Today's minority commissioned officer force totals over 32,000, representing 11.2 percent of the active officer end-strength. Minority representation extends to all officer grades.

(4) Military Training

The state of training of military personnel and operational crews and units, as well as the force readiness derived from this training, has improved substantially during the 1980s. This improvement is based on three factors. First, high recruit quality, better retention of experienced personnel, and greater personnel stability within units have raised the quality and residual value of training. Second, new, technologically advanced training facilities have made time spent in training more effective. Finally, operating tempo (OPTEMPO) -- flying hours, steaming days, ground vehicle mileage -- has been adequate to carry out essential training. To realize the potential combat capability of our forces, the Congress must continue to provide the OPTEMPO funding required for effective training.

(5) Quality-of-Life, Families, and Support

Quality-of-life programs are our highest priority because they support the 2.1 million active-duty military members and their families. We are working constantly to create an improved environment that supports the mobile military life style. Some key quality-of-life programs are: family housing; housing allowances; housing for unaccompanied service members; medical and dental support; child care; dependent education; family member employment; family support centers; commissaries; and morale, welfare, and recreation activities. Funding for these programs has increased 31

percent since 1981 in constant dollars, exceeding increases in DoD's total budget by 20 percent.

Another quality-of-life related area that received much attention last year is the Morale, Welfare, and Recreation (MWR) program, which underwent a complete policy reassessment. Our report to the Congress on the issue recommended a restructuring of MWR program categories; adjustments to appropriated fund support of revenue-generating activities, and the program in general; and a cap on future appropriated fund support for operational expenses. Given our reforms in MWR management, it is essential that the Congress continue to fund these programs, which improve morale, retention, and combat readiness at required levels.

While progress has been made, the capacity problem in child care services remains. Concerted facility planning to meet growing requirements is on-going in each Military Department as we struggle to meet the expanding child care needs of this decade and the next. To address this problem the Military Departments are expanding the scope of services, including home day care and in-home enterprise programs to lessen the pressure on center-based programs and to expand the child care service options available to members with differing needs.

(6) Military Compensation

Fair and competitive levels of military compensation are essential to our ability to fill the military ranks with skilled, dedicated, and productive people. We must pay military members wages commensurate with what they can earn in the civilian sector, or we will not be able to recruit or retain them. This lesson was learned in the late 1970s, when substantial improvements in military compensation were necessary to restore the quality of military recruits and halt an exodus of experienced military members.

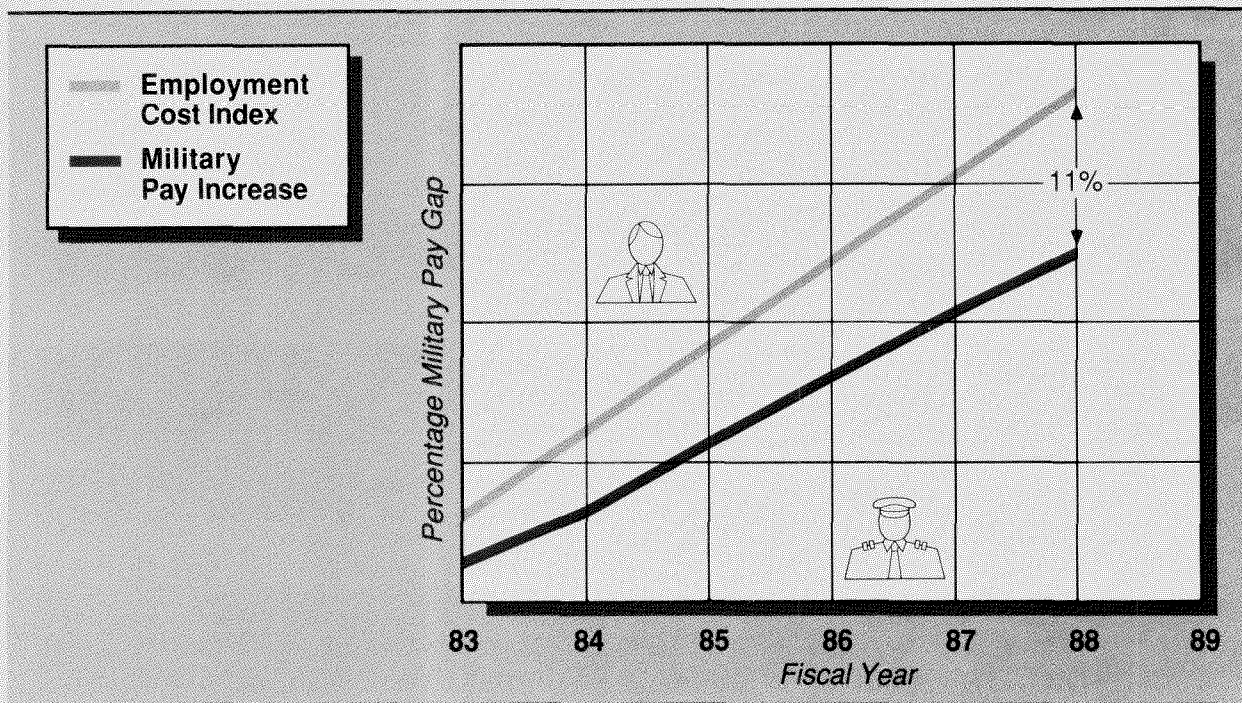
Despite the currently favorable recruiting and retention climates, we are concerned about recent scaling back of military pay raises and other benefit programs such as appropriated fund support of morale, welfare, and recreation facilities and retirement system modifications. We must take appropriate action to prevent a further erosion of pay and benefits.

Military pay raises have been capped below average private sector wage increases as measured by the Employment Cost Index (ECI) each year since FY 1982. Including a pay raise of 2 percent in FY 1988, as compared to private sector wage growth of 3.5 percent, the cumulative gap between military and private sector wage increases now

stands at 11 percent. Chart II.C.2 depicts the growth in this wage gap.

Chart II.C.2

Military and Private Sector Wage Growth



Our objective is to close the pay raise gap gradually, since manpower problems will inevitably result if military pay continues falling further and further behind. The military pay raise of 4.3 percent requested for FY 1989 would match projected private sector wage increases, preventing military pay from falling farther behind.

Adequacy of housing and housing allowances for military members remains a concern. First, housing for our single military members requires renovation or replacement at many locations. It is essential to provide adequate housing to this key element of our force structure. Simultaneously, we must ensure that allowances provided to military personnel with families in lieu of government housing are sufficient to enable them to acquire suitable housing in the private sector. Although by law members are intended to absorb no more than 15 percent of median housing costs, congressional restraints since 1985, including an FY 1988 freeze on Variable Housing Allowance (VHA) funding, have resulted in members currently absorbing approximately 22 percent of housing costs. We have

requested a VHA increase of 3.4 percent in FY 1989 to match housing cost growth between October 1986 and October 1987.

Military members stationed overseas are provided housing and cost-of-living allowances that are adjusted for both price increases and currency fluctuations. Nevertheless, out of concern that members were being adversely affected by the rapid decline in the value of the dollar against foreign currencies, we approved in February 1987 an average 15 percent increase in cost-of-living allowances. This increase has helped military members and their families achieve an adequate standard of living in other countries. In addition, we seek whenever possible to increase employment opportunities in those areas for dependents of DoD personnel.

Achieving our national security objectives requires that military personnel and their families relocate periodically from one permanent duty station to another. These assignment transfers are called permanent-change-of-station (PCS) moves. In response to concerns about PCS costs, we have implemented a number of policy changes to increase average time on station and reduce assignment turbulence. We estimated that these policy changes, as outlined in our 1986 Report to the Congress on the PCS program, are saving approximately \$280 million annually.

In addition to cost-effective management, the department has responsibility for ensuring that PCS entitlements are sufficient to cover the cost of the moves. One of the entitlements that is currently deficient is household goods (HHG) shipment weight allowances. The 1987 DoD Report to the Congress on HHG Weight Allowances showed that many military members paid HHG overweight charges in FY 1985 and 1986, reflecting the fact that these allowances have not been altered significantly in over twenty years, and ceilings have not kept pace with changes in American life styles. We recommended to the Congress a HHG entitlement schedule based on grade and dependency status, with shipment weight ceilings that meet 95 percent of the shipment weight needs of Service members.

c. Reserve Military Manpower

The Reserve Component's primary purpose is to provide for rapid expansion of our military forces in time of national emergency. Since FY 1980, the National Guard and Reserve have grown by more than 282,000 men and women, an increase of 32 percent. Today, unlike in 1980, our National Guard and Reserve forces are full-fledged partners in assuring a credible and affordable defense. In recent years, naval reservists augmented the crew of the USS New Jersey off the coast of Lebanon. In Grenada, Army reservists provided all of our civil affairs mission, and an Air Force reserve crew flew the first group of students to safety. In the retaliatory operation against

Libya, Air Force reservists and Air Guardsman provided mid-air refueling for our fighter-bombers.

Each member of the National Guard or the reserves is assigned to one of three reserve component manpower categories: the Ready Reserve, the Standby Reserve, or the Retired Reserve. The Ready Reserve includes:

- The Selected Reserve -- units and individuals with the highest reserve priority requirement for personnel, training, and equipment;
- The Individual Ready Reserve -- a pool of trained manpower to serve as augmentees and replacements for active and reserve units; and
- The Inactive National Guard -- individuals who do not participate in training, but are attached to a specific National Guard unit for mobilization.

The Standby Reserve is a pool of trained individuals who maintain their affiliation with the reserves, but are not required to participate in training or serve in units. The Retired Reserve contains reservists who were transferred to a retired status in accordance with law or directive and who may be ordered to active duty in time of emergency.

(1) Selected Reserve Manpower Strength

The Selected Reserve continues to increase in strength. Its FY 1987 end-strength of 1,150,855 represents another all-time high and an increase of 20,755 over FY 1986. This strength level meets the challenge set by the President's Military Manpower Task Force in 1982 to raise Selected Reserve strength by 13 percent, with most of the increase coming in the two Army components, by the end of 1987. For the first time since World War II, the citizen-soldiers of the Army Selected Reserve (which includes the National Guard), will exceed the strength of the Active Army. The projected FY 1989 end-strength reflects a growth of 304,000 members since 1980. Complete reserve end-strength data appears in Appendix B, Table 2.

(2) Selected Reserve Personnel

In FY 1987, 45 percent of enlisted accessions into the Selected Reserve were without prior military service. These new recruits are

needed to fill manpower requirements for entry-level positions in units. Accession trends for the Selected Reserve, both from nonprior and prior service pools have been generally positive, as shown in Table II.C.3.

Table II.C.3

Selected Reserve Enlistments
(Numbers in Thousands)

	FY 1987		FY 1988	FY 1989
	Objectives	Achieved	Objectives	Objectives
Army National Guard	81.0	85.6	84.5	84.5
Army Reserve	77.1	76.4	79.1	74.4
Naval Reserve ^a	33.8	37.7	37.6	42.0
Marine Corps Reserve	13.5	14.2	13.5	13.5
Air National Guard	13.3	13.0	13.0	14.2
Air Force Reserve	13.9	13.9	13.2	14.5
Total^b	232.6	240.8	240.9	243.1

^a All data include Navy Training and Administration of Reserves (TARs) and Category D Individual Mobilization Augmentees (IMAs). Includes Navy Sea Air Mariner (SAM) recruiting program for FY 1985 and after.

^b Numbers may not add to totals due to rounding.

The quantity and quality of enlistees continues to improve. In FY 1980 only 65 percent of accessions without prior service were high school graduates. By FY 1987, high school graduate accessions had increased to 88 percent. Additionally, aptitude test scores in Categories I-III improved significantly, from 73 percent in FY 1980 to nearly 90 percent in FY 1987. Increased recruiting resources and incentives are major factors in attracting better qualified and highly motivated reservists.

We also recognize the important contributions women and minorities make to our national defense. Our policy for placing women in the Reserve Components is consistent with that of Active

Components. The number of female Service members in the Selected Reserve has increased 93 percent since FY 1980.

(3) Full-Time Support Personnel

Concurrent with the reserve force's expanded role is the continued growth in full-time support activities provided by Active Component personnel, Active Guard/Reserve personnel, military technicians, and civil service personnel, who organize, train,

Table II.C.4

Full-Time Support Personnel in Reserve and Guard Units ¹ (End Strength in Thousands)

	Actual		Planned		
	FY 1980	FY 1987	FY 1988	FY 1989	FY 1990
Army National Guard	33	54	55	55	62
Army Reserve	17	25	29	31	33
Naval Reserve	20	31	31	32	37
Marine Corps Reserve	5	7	7	8	8
Air National Guard	26	34	35	34	35
Air Force Reserve	11	15	16	16	16
Total	112	166	173	176	191
Percent of Selected Reserve	12.9	14.5	14.9	14.8	15.6

¹Includes Active Guard and Reserve (AGR), Military Technicians (MT), Active Component (AC), and Civil Service (CS) personnel. Numbers may not add to totals due to rounding.

recruit, and administer the reserve forces in addition to maintaining unit equipment and performing other logistical activities. The total full-time support strength at the end of FY 1987 was approximately 14.5 percent of the Selected Reserve (see Table II.C.4).

(4) Individual Ready Reserve (IRR) / Inactive National Guard (ING)

The Individual Ready Reserve (IRR) is the major source of immediately available pretrained manpower for a mobilization or a

national emergency. Members of the IRR will be ordered to active duty under Title 10, U.S. Code 672 (b) to fill both active and reserve unit vacancies and bring the units to wartime strength, and also to replace wartime casualties and untrained unit members. They are essential manpower assets, particularly during the first 120 days of conflict. The IRR has increased by over 15 percent since FY 1980, and is projected to reach 634,000 by FY 1990 as a direct result of the increase in the military service obligation from six to eight years (see Table II.C.5). In FY 1987, we began requiring members of the IRR to serve at least one day of active duty each year for the purpose of conducting annual screening. Annual screening is designed to ensure the readiness and availability of IRR members in an emergency. In FY 1987, we screened one-third of the IRR population, and noted that deterioration of military skills and physical fitness do not appear to pose a problem.

Table II.C.5

Individual Ready Reserve / Inactive National Guard
(Numbers in Thousands)

	Actual		Planned		
	FY 1980	FY 1987	FY 1988	FY 1989	FY 1990
Army National Guard ^a	7	10	10	10	10
Army Reserve	199	287	338	354	388
Naval Reserve	97	78	97	107	109
Marine Corps Reserve	57	45	47	48	54
Air Force Reserve	45	48	48	50	51
Total^b	405	469	540	570	613

^a Inactive National Guard.
^b Numbers may not add to totals due to rounding

(5) *Military Retirees*

It is our policy to use both regular and reserve retirees to meet the demands of mobilization or other emergencies. Military retirees, regular or reserve, who have completed at least 20 years active service may be ordered to active duty at any time. Any other retired member of a Reserve Component may be ordered to active duty upon a congressional declaration of war or national emergency. There are over 800,000 non-disabled military retirees under age 60, many of whom are preassigned to mobilization positions. Age or disability alone may not be the basis for excluding a retiree from service during mobilization (see Table II.C.6).

Table II.C.6

Military Retirees¹
(Numbers in Thousands)

	ARMY	NAVY	USMC	USAF	DOD Total
Under Age 60 & Non-Disabled:	248	208	41	342	839
Over Age 60 or Disabled:	367	254	48	248	917
Potentially Available for Mobilization:	615	462	89	590	1,756

¹As of 30 June, 1987

d. Civilian Manpower

(1) The Contribution to the Total Force

Our policy is to employ civilian employees and contractors wherever possible to free our military forces to perform military functions. This policy minimizes the required number of active duty personnel and enables civilians to provide stability and continuity to offices and organizations when uniformed personnel are rotated. A total of 19,500 military spaces have been converted to civilian positions between FY 1983 and FY 1988, helping us meet our Total Force manpower needs.

Civilians constitute approximately one-third of our active manpower. They participate in all defense activities not potentially involving combat. In addition to their traditional support roles, in recent years civilians have also increased their involvement in the maintenance, repair, programming, and in some instances, the operation of offensive, defensive, and strategic control and surveillance forces.

(2) Size of the Civilian Work Force

(a) Requirements

Our employment figures are drawn from the manpower requirements determination process. This process is designed to meet our needs at the lowest cost while maintaining the highest level of efficiency. In FY 1989, we plan to employ about 1,102,343 civilians. Of this number, 1,016,020 are direct hires and 86,323 are indirect hires. Direct hires are U.S. citizens and foreign nationals who are employed directly by the Defense Department. Indirect hires are foreign nationals paid by their own government in accordance with status of forces agreements for working at U.S. bases. Under contractual arrangements with the host government, we reimburse the host country for the cost of indirect hire personnel.

Civilian employment will decrease from the FY 1988 level by nine-tenths of 1 percent. In FY 1989, as in FY 1980, civilians will comprise approximately 25 percent of total defense manpower. Our successful efforts to increase civilian productivity and the resulting increases in efficiency will continue helping us reduce maintenance backlogs and better manage spare parts, thereby allowing the military to return to military positions and increasing readiness.

(b) Management Issues

Over the years, the Congress has exercised oversight of civilian manpower in terms of end-strength ceilings. Recently, however, the Congress has pursued a more enlightened approach. The FY 1986 and FY 1987 Appropriations Acts directed us to manage the authorized defense program with no civilian end-strength ceilings. This positive initiative enables us to employ civilians based on mission requirements and funded workload. We are opposed to any alternative ceiling on civilian manpower that does not employ this management method, and look for congressional assistance in eliminating OCONUS work-year ceilings. Statutory ceilings and arbitrary reductions are both inefficient and counterproductive.

In recent years, the Congress has expressed interest in increased reporting requirements for civilian manpower. We believe in fully informing the Congress on the positive story we have to tell about our civilian manpower management initiatives. The volume of congressional reports required, however, consumes excessive preparation time, and exceeds the amount of information necessary for prudent management oversight. We are ready to work with the Congress to find some method to consolidate, reduce, and streamline civilian manpower reporting requirements.

We also face special work force reduction challenges from the Goldwater-Nichols DoD Reorganization Act of 1986. The Act requires non-programmatic Defense Agency manpower reductions of 5 percent in FY 1988 and an additional 5 percent in FY 1989. Defense Agency Management Headquarters must also reduce manpower by 5 percent in FY 1988 and an additional 10 percent in FY 1989, with no corresponding reduction in workload. We have therefore been directed to reduce our Defense Agency work force by over 10,000 spaces with no corresponding reduction in workload or mission requirements.

The Defense Agencies are essential to this department's efficient and economical operation. An alternative to the mandatory work force reductions would be to allow funded workloads and mission requirements to determine the size of the Defense Agency work force. Defense Agency manpower reductions will force us to make painful choices, all likely to diminish combat support capabilities.

(3) Characteristics of the Civilian Work Force

Increasingly complex support functions throughout the department drive our continuing demand for highly skilled technical, administrative, and professional employees. Consequently, our recruitment efforts focus on individuals with college degrees, and

our sustainment programs are driven by the need to retain the most highly skilled and capable performers.

Changes in the composition of our work force, however, continue to concern us. A decline in our more senior, experienced employees is continuing, and we as yet have no corresponding increase among those who are under age 31. These dynamic changes in the civilian work force composition, both in terms of special skills and experience, indicate problems which, if left unattended, will result in future recruitment and retention difficulties.

In our efforts to address these concerns, we have made known our strong support for the legislation to authorize alternative personnel management systems under Title V of the U.S. Code as a means to attain systemic improvements and enhance the quality of the work force. As a minimum, such legislation should include a simplified position classification and a more flexible compensation system.

(4) Civilian Personnel Management Initiatives

(a) Army Programs

The Army is placing increased emphasis on the role and use of civilians. In April 1986, an Army Inspector General special inspection of Army civilian personnel management found significant problems in the current system. A joint civil-military project was established to modernize and improve the system. Consequently, the Army Civilian Personnel Regulations have been reduced by over one half. The Army project's report proposes numerous other policy and program changes that are being pursued.

(b) Navy and Marine Corps Programs

The Navy recognizes that an efficient and responsive civilian personnel management program is vital to a productive shore establishment. All civilian personnel regulations and policies (Federal, Defense, and Navy) have been reviewed and, as a result, the Navy has streamlined and simplified dozens of its own policies and procedures.

One major change the Navy has effected is "Managing to Payroll." This change allows line managers greater control over the size and grade structure of their civilian work force by giving them the authority to establish and classify positions within assigned payroll amounts, and in accordance with published classification standards. Payroll amounts are derived from congressionally approved

compensation levels for authorized programs. Managing to Payroll is consistent with the congressional waiver of civilian end-strength ceilings, and is responsive to congressional criticism regarding past DoD performance under the statutory ceiling waiver. In summary, the Navy has found that Managing to Payroll encourages efficient use of our civilian work force by ensuring employment is considered as a cost linked to congressionally approved program levels.

(c) Air Force Programs

As a part of its overall Civilian Strategic Plan, AGENDA 87, the Air Force has also developed an alternative system for managing civilian employment. Realizing the potential for achieving greater productivity at the work site by linking budget authority to personnel decisions, the Air Force developed a "user friendly" budget/personnel tool, under the project title CIVCOST, that enables managers to make fiscally sound personnel decisions. The Air Force began limited testing of CIVCOST in FY 1988 with expanded testing planned in FY 1989. CIVCOST consists of a computer program that allows a manager to "price-out" various employment options, in effect letting the manager make more intelligent decisions about the size and composition of his or her staff. The Air Force approach holds great promise as a method of enhancing productivity and increasing readiness.

Furthermore, during the last few years the Air Force has been working diligently toward implementing a comprehensive gainsharing program at McClellan Air Force Base, California. Gainsharing is a method of improving work force productivity by allowing employees and the employing activity to share in a portion of the savings when an organization's productivity exceeds a pre-established rate. It has been demonstrated successfully in the private sector and has tremendous potential for increasing Air Force productivity, particularly in an industrial setting.

As with the other Services, the Air Force is reviewing all of its civilian personnel regulations to tailor and streamline them to the needs of their managers and supervisors.

(d) Defense Mapping Agency Programs

A modernization of the entire Defense Mapping Agency (DMA) production system -- from source assessment to the distribution of earth information in digital format to the combat forces -- is under way. An integral facet of the developing state-of-the-art system is a training program to teach the skills needed to operate our new equipment, and to utilize leading-edge technology in producing accurate and up-to-date information in a timely fashion. The DMA

developed a comprehensive training program for the entire professional and technical work force, which comprises approximately 60 percent of DMA's 8,500 civilian employees.

To date, 1,500 employees have been trained in the basic features of the new production systems. Current plans call for an accelerated training initiative as the new equipment is developed and fielded. This program is vital to the delivery of timely, accurate, and credible mapping data to the combat forces.

(e) *Project EXPO*

Project EXPO is a research project that we have undertaken, with the concurrence and assistance of the Office of Personnel Management, to identify and evaluate methods for increasing personnel office productivity and improving the delivery of personnel services to management and employees. This project allows nine DoD civilian personnel offices to try new approaches and to compare results with traditional operations. Innovations in organizing, staffing and automating personnel office functions are among the highest priorities in our continuing efforts to find ways to make personnel systems work in a more timely and responsive fashion. Our efforts to improve civilian personnel efficiency are continuing. As the gains in increased productivity accumulate, the savings to the taxpayer will grow while we enhance mission effectiveness.

2. Conclusion

During the last seven years, the Total Force has come into its own as an integrated team of uniformed and civilian personnel designed to improve deterrence and combat capabilities. The Total Force is an element of our defense posture designed to evolve with the growing threat and changing manpower requirements. It provides a dynamic manpower force that gives the U.S. armed forces the flexibility to meet their worldwide commitments.

D. THE DEFENSE INDUSTRIAL BASE AND DEFENSE INSTALLATIONS

1. Introduction

The defense industrial base plays a major role in preserving the common defense. In times of conflict, we must ensure that our industrial base can provide qualitatively superior defense materiel in quantities sufficient to meet our national security needs. In the last decade, however, we have witnessed a slow migration of manufacturing capabilities away from our shores. This migration concerns us, and we are taking steps to determine its causes and find ways to reverse it.

Specifically, we are developing a strategy to bolster the competitiveness of our defense industries. We are consulting with outstanding leaders from business and industry, trade and professional societies, and academia, as we formulate an overall manufacturing and industrial base strategy. We are confident that our process will identify potential policy changes to strengthen our industrial competitiveness. We are aware that serious problems already exist, and are taking corrective action.

Through a wide variety of means, including working with other governmental agencies, we are continuously assessing our vulnerability to foreign dependency for critical items. Through these efforts, we have identified problems in the machine tool and electronic areas, and are highly concerned with the situations developing in the precision optics and bearings industries. When we have perceived that our national defense is at risk due to a critical defense industrial sector's dependency on foreign sources, we have taken corrective measures. Examples include the President's Machine Tool Action Plan -- discussed later -- and our involvement in the Semiconductor Manufacturing Technology Institute, or SEMATECH.

Although the exact nature of the DoD's involvement in SEMATECH has yet to be determined, the concept involves a consortium of electronics component manufacturers joining to develop basic manufacturing technology concepts that can be taken back to their parent companies for use. Through this pooling of intellectual and financial resources, technological progress can be realized more quickly than if each company tries to work independently.

Another area of concern is the condition of our defense installations. It is imperative that our defense physical plant capital investment of over \$450 billion be sustained at rates necessary to provide adequate living and working conditions for DoD personnel. In the following pages, we will discuss further our efforts in the defense installations and industrial base areas, and note related efforts to improve system's quality and manufacturing productivity.

2. Industrial Capabilities Assessment Systems

a. Industrial Mobilization Responsiveness

To ensure that our industrial base can respond to potential emergencies, we are testing a concept that provides industrial mobilization responses to warning indicators. These responses comprise a multitude of ready action packages -- options -- that can be selected for different contingencies to ensure that our defense industrial base can respond to a broad spectrum of potential emergencies. Our options would range from maintenance of industrial base status quo in peacetime to total industrial mobilization in a national emergency. In developing the industrial response concept, we are examining these broad categories for managing industrial resources: government planning and management activities; economic policy; trade policy; production capacity; labor force; materials and components; and civil activities.

b. Defense Industrial Network

The Defense Industrial Network (DINET) is an automated system being developed to assist decisionmakers assess industrial responsiveness. With this system we will have a means for retrieving and displaying data to allow us to monitor acquisitions, economic conditions, and foreign investments, and assess the impact on our industrial base.

c. Production Base Analyses

Production Base Analyses (PBA) are prepared annually by the Military Departments and the Defense Logistics Agency (DLA). PBAs are a collection of industrial surveys and capacity studies that form the basis for preparedness and productivity planning, programming, and budgeting. The most recent PBA identified some potentially serious industrial base constraints that threaten our ability to meet our peacetime and emergency needs. We continue to

apply our limited resources to correct those industrial base deficiencies where we can, but are also fostering a partnership with industry to help solve critical deficiencies.

d. North American Defense Industrial Base Organization

During the past year, the United States and Canada formally chartered a joint organization, the North American Defense Industrial Base Organization, to focus on mutual industrial base needs. The organization's goal is to ensure that both nations' industrial bases complement one another and are jointly able to respond to their security requirements. The group's subcommittees will focus on requirements formulation, data exchange, education requirements, and mechanisms for enhancing both governments' interface with private industry. Representatives from both countries look forward to a long-term cooperative venture between our two nations.

3. Quality and Productivity Initiatives

a. Quality

A system's quality -- the precision of its components' manufacturing and assembly, the grade of the raw materials -- has a major bearing on the cost and field performance of defense systems and equipment; hence, quality has become a high priority in defense acquisition. Our goal is to improve the quality of new defense systems. To this end, we are emphasizing a "Total Management Approach" that places emphasis on quality much earlier in program development and integrates quality into other industrial base programs.

Under this approach, we are working with the Military Departments and Defense Agencies to exploit new opportunities to enhance quality, while including them in policy and procedure revisions and updates. The DoD Quality Assurance Policy Council is ensuring that the actions taken by the Services and Defense Agencies reflect a coherent approach fostering both the application of sound engineering principles, and the continuous improvement of manufacturing processes.

b. Industrial Modernization Incentives Program

The Industrial Modernization Incentives Program (IMIP) is a major DoD initiative to foster long-term defense industrial base modernization. The program's objective is to increase defense

contractors' capital investments to enhance productivity, improve quality, reduce acquisition costs, and expand the industrial base.

IMIP benefits can be measured in terms of increased flexibility and capacity to respond to defense requirements, as well as by savings realized throughout the life cycle of the weapon systems produced in IMIP-modernized facilities. We currently have over 30 prime contractors and over 45 subcontractors participating in approximately 85 IMIP modernization programs.

c. Metric Transition

The United States is virtually alone in the world regarding use of the inch-pound system of weights and measures; most other nations use the metric system as their national standard. The Metric Conversion Act of 1975 indicated the metric system was the preferred standard, to be implemented in a voluntary manner. Although the inch-pound system still predominates in this country, more metric products and systems are entering our inventories as we purchase more items from foreign sources, and as U.S. industries convert their manufacturing operations.

We have concluded that it is not in DoD's best interest to continue using a dual-base measurement system. Consequently, we have strengthened our standards requiring the use of the metric system. The Army's Multiple-Launch Rocket System and portions of the Navy's T-45 primary trainer aircraft will use the metric system. In addition, the Strategic Defense Initiative Office has announced that the SDI will use the metric system. We believe these decisions will accelerate the overall defense industry transition, reduce future support costs, enhance interoperability with our allies, and simplify cooperative development efforts.

4. Industrial Base Programs and Initiatives

a. Manufacturing

(1) Manufacturing Technology Program

The Manufacturing Technology program is a broad-based, production-oriented program supporting our Research, Development, and Acquisition program. The program provides new and innovative manufacturing technology needed to produce DoD materiel in those cases where the private sector is unable or unwilling to produce it in a timely manner. Program investments are necessary to reduce the technical and financial risk of implementing the

program's results in our defense production base. The program is often a critical link between research and development activities, and production.

Manufacturing technology has received increased interest on many fronts during the past year -- both within and external to DoD. The National Research Council in its report, "Toward a New Era in U.S. Manufacturing, The Need For a National Vision," attributed this increased awareness to the convergence of three powerful trends:

- The rapid advancement and spread of manufacturing capabilities worldwide, which has created intense competition on a global scale;
- The emergence of advanced manufacturing technologies, which is dramatically changing both the products and processes of modern manufacturing; and
- Changes in traditional management and labor practices, organizational structures, and decisionmaking criteria, which represent new sources of competitiveness and introduce new strategic opportunities.

Because many of our high-performance weapon systems require state-of-the-art technology, these trends are particularly evident within the industrial base supporting DoD. During the past year, we have focused particularly on developing machine tool technology as called for by President Reagan's "Machine Tool Domestic Action Plan."

(2) Machine Tool Domestic Action Plan

In supporting the President's Machine Tool Domestic Action Plan, we are:

- Budgeting \$5 million to support the private sector National Center for Manufacturing Sciences (NCMS). The NCMS, among other things, will foster research projects to enhance the technology of the machine tool industry;
- Sponsoring a government/industry conference to define potential machine tool research projects to improve manufacturing technology;

- Designating the machine tool industry as a separate area of interest under the DoD Manufacturing Technology program; and
- Providing the industry an 11-volume index of machine tool-related research and development now sponsored by DoD.

(3) Other Manufacturing-Related Technologies

Several other substantial manufacturing-related programs are evolving that are intended to further the defense industry's ability to produce critical items cost-effectively. Two recent examples include the Infrared Focal Plane Array and the Micro-Electronics Manufacturing Science and Technology programs. Both programs have far-reaching implications for reducing the cost of photo sensors and electronic microcircuits.

b. Government-Owned Industrial Property Initiatives

Our government property initiative to bring management improvements to the acquisition, use, and control of property in the possession of contractors is showing positive results, even though it is still in the initial implementation stages. The Services and Defense Agencies have begun to locate and dispose of large quantities of excess government property.

We are currently identifying Government-Owned Contractor-Operated (GOCO) plants that are needed to meet defense requirements, but which DoD no longer needs to own. We plan to notify the General Services Administration of those plants that can be sold by negotiation, under the "excess to ownership" concept, to the contractor operating the plant.

c. Defense Production Act -- Title III

Our basic policy is to rely on the private sector, wherever possible, to produce DoD materiel. In certain circumstances, however, private investors are unable or unwilling to provide the production capacity needed by DoD. In such cases, Title III of the Defense Production Act provides DoD the option of offering purchase commitment incentives to private companies to establish the desired production capacity. Recent shortfalls in polysilicon and traveling wave tube (used in electronic systems) production capacity required us to exercise this option. During the past

year, we established a Title III program office and awarded several contracts with purchase commitment incentives.

d. Strategic Petroleum Reserve

To ensure our ability to meet energy requirements in the future, we should continue to build U.S. petroleum stocks toward the President's goal of a 750 million barrel Strategic Petroleum Reserve. It is equally important to continue working with our allies and economic partners to ensure that they build and maintain similar strategic oil stocks. Further, federal lands with significant prospects for strategically important new oil finds should be released for exploration and development.

5. Defense Installations

The condition of our defense installations is vital to the accomplishment of our military mission. In FY 1988, we requested 24 percent real growth in military construction and family housing appropriations. This increase was required to redress the neglect of our facilities caused by inadequate funding in the 1970s, and support facilities for our new weapons systems. Unfortunately, the FY 1988 appropriation was only 85 percent of our request, resulting in an increase in the cost of readiness, and delays in our quality of life improvements. In addition, this inadequate funding level is placing the revitalization of our existing physical plant out of reach. We need to reverse this trend now.

The military construction investment program has made steady gains since 1981, especially in support of major weapons systems, but much remains to be done. The bulk of our facilities worldwide were built in the 1940s and 1950s during World War II and the Korean War. Many of them were intended only for temporary use, yet they are still used today. Coupled with the problem of our facilities' age is the fact that the housing requirements of our armed forces are far different now. The demographics have changed with the advent of the all-volunteer force and require an increased emphasis on the family. There are also five times as many women in uniform as there were 15 years ago. Furthermore, our warfighting equipment has become much more complex, requiring sophisticated support in specialized facilities, and our older physical plant cannot handle the high technology equipment. All of these factors place an enormous stress on our installations and thus mandate greater investment in facilities.

To meet these facility requirements, I intend to establish a strategy for recovery. It begins with a partnership between the department, the Congress, and industry to recognize the investment

we have made, and to establish a prudent level of investment to revitalize existing plant and eliminate deficits. At the same time, we must continue to build for future needs, and fund a level of maintenance and repair to keep improving our facilities' conditions. The department will do its part by requesting adequate funding for military construction, and real property maintenance and repair to support a balanced program that funds the most urgent projects that:

- Support weapon systems' fielding, sustainability, and operational readiness;
- Implement approved restationing plans and force structure changes;
- Revitalize the current plant, improving the efficiency of current operations by repairing, modernizing, and replacing existing facilities and infrastructure;
- Improve facilities' conditions through repair and maintenance while maintaining the backlog of essential maintenance and repair at acceptable levels given overall resource limitations; and
- Maintain acceptable living and working conditions for our military forces, their families, and our civilian work force.

Our strategy will be based on sound economic judgment and innovation that cuts "red tape." It will achieve a balance in facility investments from all sources. In addition, we will continue to involve more people through increased private sector investments, burdensharing, NATO infrastructure investments, and self-help.

6. Conclusion

U.S. manufacturers face serious challenges. We believe that the government, especially DoD, can play a role in supporting the changes necessary on the factory floor, but that the major impetus must come from the private sector itself.

We will continue working closely with the private sector in confronting the challenges facing the U.S. industrial base, and with the Congress in revitalizing our defense installations.

Part III

Defense Programs

A. LAND FORCES

1. Introduction

Modern, robust land forces are key to our ability to execute the national military strategy. Our land forces program ensures these forces are capable of playing their role in deterring aggression, or in defeating an aggressor should deterrence fail. In preparing our program, we consider many factors, including our forward-deployed posture in Europe, Asia, and elsewhere; the ratio of active to reserve forces; and the rate of development and fielding of new systems. Another factor influencing our modernization strategy is the AirLand Battle Doctrine, which holds that land forces must be able to fight the rear, close, and deep battles. To do so, our forces require modern equipment and adequate amounts of training. Fiscal constraints, however, have forced us to make difficult choices among modernization, force structure, readiness, and sustainability. We have decided that the increase in risk to our national security would be greater if we attempted to maintain a larger force structure that compromised readiness and combat sustainability -- a "hollow" force. We have, therefore, reduced the size of our land forces to preserve our hard-won improvements in force readiness and sustainability, and to maintain the progress of our force modernization.

Our force structure reductions have been carefully focused. Reductions have not been made in our heavy armored or mechanized forces, those that would bear the brunt of any conflict with the Warsaw Pact or a comparably equipped opponent. We have instead made reductions in lighter infantry formations, and in the unarmed elements of the Army aviation fleet. Similarly, in allocating funds for force modernization, we gave highest priority to systems that would contribute most to our warfighting capabilities against our best-equipped potential adversaries. For that reason, we have held M1A1 tank and M2/M3 Bradley fighting vehicle production near previously planned levels, and will continue producing the AH-64 helicopter. Other systems have been terminated and some developmental efforts reduced in order to keep higher-priority systems funded at efficient levels. The following sections highlight some of these program changes.

2. Update of Force Structure Composition and Disposition

Our Army and Marine divisions are deployed as shown in Chart II.A.1. The number of Army divisions will remain at 28 -- 18

planned. One battalion's mission will be assigned to the National Guard. We will attempt to activate the second battalion in FY 1990. In addition, Army Reserve Component end-strength in FY 1989 will not increase by 26,100 soldiers as previously planned. The Marine Corps' end strength will be reduced by 2,900 active Marines and 900 reserve Marines. The Marine Corps will address combat unit restructuring over the next two months.

Army aviation force structure reductions will come principally from light observation and utility helicopter inventories, many of which date from the Vietnam era. We will eliminate a combination of 450 OH-58A and UH-1 aircraft, along with their flight and maintenance crews, by September 1988. Another 900 of our older aircraft and their associated personnel will be phased out over the next six years. These actions decrease the Army's aviation fleet from more than 8,250 to less than 7,000 aircraft. Plans are being made to reduce the Army inventory further still, to a long-term goal of 6,600 aircraft. The resulting fleet will be smaller but more affordable, and equipped on average with newer and more capable aircraft.

3. Defense Program Update

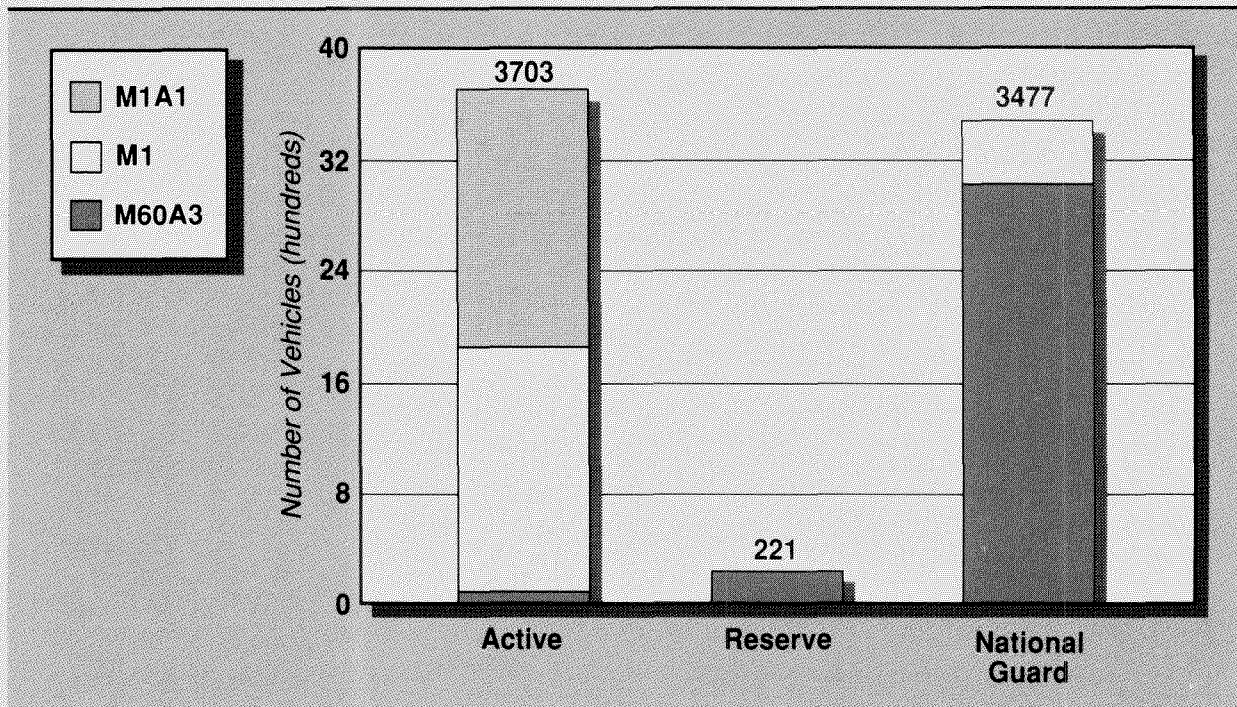
a. *Programs*

To meet our lower spending targets, we have made changes in a number of modernization programs. These changes were needed to sustain high-priority initiatives at efficient rates and to accelerate Army aviation force modernization. The following programs were supported in last year's plan, but will be cancelled or deferred beyond FY 1989 in the revised budget submission: the Aquila remotely piloted vehicle (RPV); M-198 howitzer; Copperhead I artillery round; 120mm mortar; Armored Family of Vehicles (AFV); 8-inch Search and Destroy Armor (SADARM) projectiles; and EH-60A Quickfix helicopter.

M1 Abrams Tank -- The Army will continue M1A1 procurement at a rate of about 600 tanks a year, thereby achieving multiyear procurement efficiencies while modernizing its armored forces. Planned upgrades to the M1 ("Block II" improvements), however, will not begin in FY 1989 as previously planned. Almost 60 percent of the Abrams inventory will consist of M1-series vehicles, equipped with 105mm guns; the newer M1A1 with its 120mm gun, now being introduced into our European-deployed units, will constitute the balance.

Chart III.A.2

Projected Field Distribution of Army Tanks, FY 1992



Modernization of Army Reserve and Army National Guard units with M60A3 tanks will continue through FY 1990. Chart III.A.2 shows the projected distribution of the Army's total tank inventory in FY 1992. The revised FY 1989 budget funds the first 14 M1A1 tanks for the Marine Corps.

M2IM3 Bradley Fighting Vehicle (BFV) -- The Army will procure 581 BFVs in FY 1989, a small reduction from previously planned levels. If this procurement quantity is maintained in future budgets, the Army will reach its Bradley procurement objective of 6,882 vehicles by FY 1994. Under the Bradley's survivability enhancement program, improvements will be integrated into new-production vehicles and into selected models already in the field. European-deployed units, POMCUS (prepositioned overseas materiel configured to unit sets), rapid deployment forces, and war reserve stocks will receive the most modern vehicles, with older variants going to other units in the continental United States (CONUS).

AH-64 Apache Helicopter -- The revised FY 1989 budget provides funding for 72 AH-64s, a major change relative to previous Army aviation procurement plans. The LHX program has been scaled back

and refocused on the reconnaissance mission. Thus, we will be able to continue procuring the AH-64, the mainstay of our attack-helicopter fleet.

In addition to the new procurement, the FY 1989 budget allocates \$94.6 million to develop upgrades to the Apache, including an improved fire-control system; improvements in the night-vision/target-designation system; integration of Airborne Adverse Weather Weapons Systems (AAWWS) into the aircraft; and signature-reduction measures. Four AH-64 battalions have been fielded to date, including the first European unit at Illesheim, West Germany. We will continue deploying the AH-64 in FY 1988, assigning battalions to the 82nd Airborne Division; the 101st Air Assault Division; the III Corps at Fort Hood, Texas; the V and VII Corps in Europe; and the National Guard.

New Light Helicopter (LHX) -- The revised FY 1989 budget supports the start of the demonstration/validation phase of the LHX's development program. Our review of this program in early January 1988 led to its major restructuring. Under the revised plan, the Army will produce the aircraft in two versions -- an armed reconnaissance model to replace aging OH-58 Scout helicopters, and a light-attack version to replace the AH-1. The LHX will be smaller than previously planned, and its fielding will be delayed beyond FY 1995. Significant funding reductions in the LHX program will allow us to sustain AH-64 and UH-60 production, as well as make needed improvements in these systems. The Army's utility helicopter requirements for the foreseeable future will continue to be met by a combination of UH-60 and older UH-1 and OH-58 aircraft. The FY 1989 LHX program will focus on developing mission avionics, advanced flight controls, survivability features, and reducing technological risks. We foresee a future production requirement of about 2,000 LHXs.

OH-58D AHIP -- The revised budget supports procurement of 24 AHIP aircraft in FY 1989, and provides advance funding for an additional 24 aircraft scheduled for authorization in FY 1990. Future procurement of the AHIP will be determined by the pace and fielding schedule of the LHX, and by other modernization needs as we plan for the 1990s. Both fielded and new-production AHIPs will be armed with Air-to-Air Stinger (ATAS) missiles.

AH-1W Super Cobra Helicopter -- Consistent with congressional action on the FY 1988 budget, the final 34 aircraft in the AH-1W program will all be purchased in FY 1988, instead of in FY 1988 and FY 1989 as previously planned. These aircraft will sustain the Marine Corps' attack helicopter forces into the 1990s. Development of a night targeting system (NTS) for the AH-1W also is funded in FY 1989.

Forward-Area Air Defense System (FAADS) -- FAADS is an integrated system comprising five components designed to grow with the air threat through the 1990s and beyond. Work on the initial system components is proceeding on schedule. The most significant developments within the past year were the selection of two key components of FAADS: the Line-of-Sight Forward-Heavy (LOS-F-H) and Line-of-Sight Rear (LOS-R) systems.

The Army has recently selected the Oerlikon/Martin Marietta Air Defense/Antitank System (ADATS) to perform the LOS-F-H mission. Testing at White Sands of four competing systems included live-fire tests and acquisition/tracking trials conducted under a range of weapons-employment conditions. Five firing units will be procured in FY 1989, and additional operational tests will be conducted. The test results will form a basis for decisions on the system's configuration. The ADATS will provide a major, urgently needed increase in the forward air defense capability of Army divisions deployed in Europe. As production continues toward the planned level of 562 fire units, the results of operational tests will be applied to improve performance further against emerging threats.

Last year, the Army selected the Boeing Avenger, which incorporates pedestal-mounted Stinger missiles, as its LOS-R system. Divisional rear-area defense capabilities will be greatly enhanced as this system is deployed. As with the LOS-F-H, initial LOS-R production will be used to equip divisions deployed in Europe. Funds for 59 fire units have been authorized to date, including 39 in FY 1988. The FY 1989 budget provides funds for additional systems as we move toward our objective of 1,200 systems.

In other areas of this program, the Non-Line-of-Sight (NLOS) system will remain in advanced development longer than initially planned. Procurement of ground sensors for the command, control, and intelligence component, originally scheduled for FY 1989, has been deferred.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
M1A1			
Development:			
\$ Millions	24.5	73.1	45.8
Procurement:			
Quantity	810	645	559
\$ Millions	1,793.0	1,618.3	1,379.7

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
M2A1/M3A1			
Development:			
\$ Millions	46.3	21.6	21.8
Procurement:			
Quantity	662	586	581
\$ Millions	804.5	716.5	714.0
FAADS LOS-F-H			
Development:			
\$ Millions	23.6	99.0	49.8
Procurement:			
Quantity	--	--	60
\$ Millions	--	--	108.8
AHIP Modification			
Procurement:			
Quantity	36	36	24
\$ Millions	176.2	160.1	170.0
AH-64 APACHE			
Development:			
\$ Millions	--	40.0	94.6
Procurement:			
Quantity	101	77	72
\$ Millions	1,108.2	937.9	891.2
LHX			
Development:			
\$ Millions	38.4	30.0	124.7
AH-1W			
Procurement:			
Quantity	--	34	--
\$ Millions	33.7	226.6	0.6

4. Update of Readiness and Sustainability Goals

The Army's operating tempo goals for FY 1989 of 850 training miles per year for major combat tracked vehicles and 15.8 flying hours per month for aviation crews remain unchanged. Modest decreases in stock funds and peacetime spares are not projected to have a significant impact on Army or Marine Corps readiness. Both the Army and Marine Corps will maintain the combat proficiency of their units through joint and combined-arms exercises at the National Training Center and Marine Corps Air-Ground Combat Center. We are currently investigating practical measures that

will eventually be used to relate training and resource inputs to levels of readiness. We feel confident, however, that the operating tempos funded in the FY 1989 budget will provide the necessary training for our soldiers. Army and Marine Corps progress toward increasing combat force sustainability will be slowed, however, by planned reductions in war reserve spares and ammunition procurement.

5. Conclusion

We have faced hard choices in revising the FY 1989 budget, but I believe we have maintained a reasonable balance between readiness and modernization, although at some cost in force structure. We have tried to keep most of our major land force programs at efficient production levels, rather than stretching them and incurring higher unit costs. Cutbacks have been made in such a way as to minimize the effect on our higher-priority armored and mechanized forces.

There can be no doubt, however, that these force structure reductions, no matter how carefully focused and considered, have increased the risk to our national security. The threat, which these forces were designed to meet, has not diminished. Thus, we must redouble our efforts to ensure that our existing forces are modern, combat ready, and sustainable.

B. NAVAL FORCES

1. Introduction

The Navy's maritime strategy, outlined in last year's report, continues serving our nation well, as exemplified by world events in 1987. We have witnessed firsthand in 1987 the utility and flexibility of naval forces in our important collective defense efforts in the Persian Gulf. Beyond these crisis management tasks, our naval forces -- in conjunction with those of our allies -- play a crucial role in executing the national military strategy.

Last year, we described the steadily improving quality of Soviet maritime forces, a trend that continues unabated. As part of our competitive strategy to counter the threat, we will continue to exploit both Soviet force structure weaknesses and geographic disadvantages to offset the Soviet's numerical strength. In a major conflict, our strategy and force employment options would force the Soviets to fight from a defensive posture against our qualitatively superior forces.

The improvements we are witnessing in Soviet maritime forces dictate that we maintain a steady course in modernizing our naval forces. Yet abrupt defense funding cuts and projected resource constraints have resulted in force structure reductions and selected program deferrals or terminations. In particular, we will have to delay achieving our long-standing force goal of 600 ships. We are limiting force structure growth in the near-term by retiring the least-capable older ships to provide adequate funds for the remainder of the fleet, including new and more capable ships that are being delivered.

a. Force Structure and Composition

We have made considerable progress over the past seven years in expanding the capabilities of our naval forces. Our force expansion efforts and force structure goals, summarized in Table III.B.1, support the wartime naval fleet disposition depicted in Chart III.B.1. Due to fiscal constraints, however, the Navy will retire 16 older frigates (ten FF-1040 class and six FFG-1 class) earlier than previously planned. Along with other adjustments, this will result in an overall force of 580 deployable battle force ships at the end of FY 1989, rather than the 605 ships projected in last year's report. This reduction was decided upon

Table III.B.1

Force Structure Progress and Goals

	Force Level			
	FY 1980	FY 1987	FY 1989	GOAL
SSBNs	40	37	37	20-40
Deployable Aircraft Carriers	13	14	14	15
Battleships	0	3	4	4
AAW Cruisers/Destroyers	63	73	77	100
ASW Destroyers	44	32	32	37
Frigates	71	115	100	101
Attack Submarines	79	102	103	100
Mine Countermeasures Ships	3	4	9	14
Amphibious Ships (MAF & MAB)	66	63	67	75
Patrol Combatants	3	6	6	6
Combat Logistics Ships	48	56	60	65
Support Ships and Auxiliaries	49	63	71	60-65
Total	479	568	580	600 (approx.)

only after considering closely the savings that would result over the next few years and the risks incurred by lowering our capability to meet U.S. combat and deployment commitments, versus the risks that would result from other reductions of equal size.

b. Force Structure / Program Goals

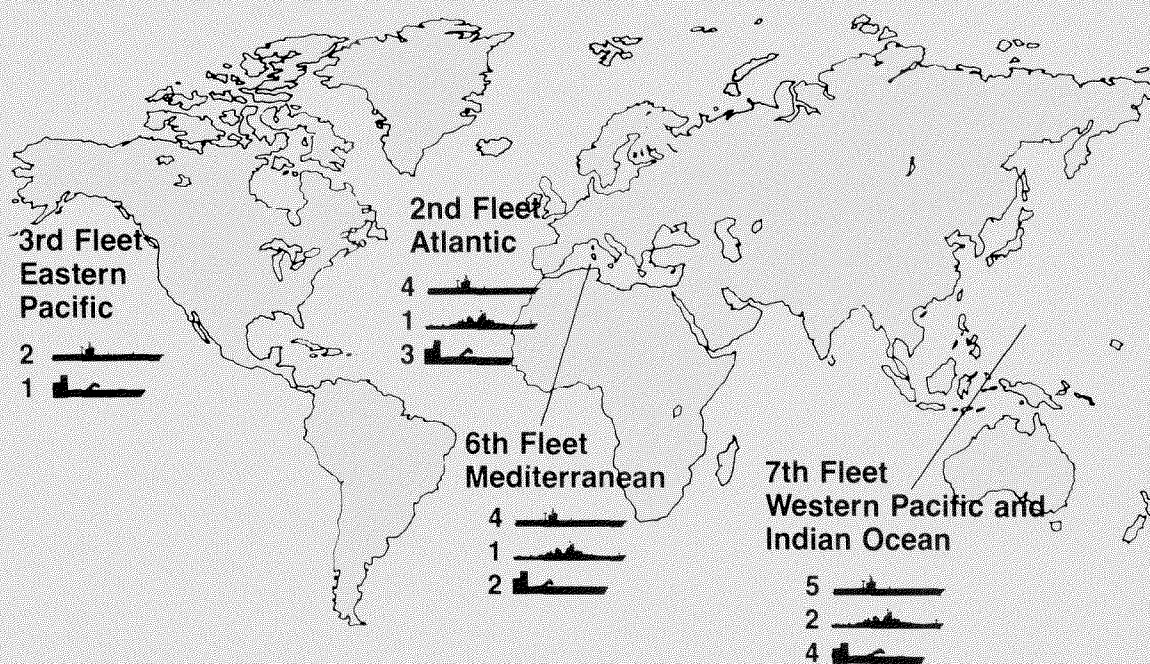
Our force objectives are essentially unchanged from those established seven years ago. Our goals for the aircraft carrier (CV/CVN), attack submarine (SSN), and battleship forces will soon be achieved. Fiscal constraints and program execution problems will, however, delay the attainment of our goals for several other

elements of the force, as subsequent sections explain. In general, our primary objectives are to:

- Sustain a fully supported, balanced fleet with an appropriate mix of ships and aircraft;
- Increase efficiencies through competitive strategies and refined tactics;

Chart III.B.1

Wartime Disposition of U.S. Naval Fleets



LEGEND



- Carrier Battle Group
- Battleship Surface Action Group
- Underway Replenishment Group

- Maintain high levels of readiness; and
- Improve sustainability, especially in the area of munitions.

2. Readiness and Sustainability Progress

a. Readiness

Our FY 1989 request is designed to sustain the high state of readiness made possible through our investments in personnel, training, and materiel support programs over the last seven years. The budget request supports the operation of naval forces at the levels envisioned in our goals -- 50.5 steaming days per quarter for the deployed fleets, and 29.0 days for the home fleets.

b. Sustainability

Last year, the Navy made significant progress in building its stocks of conventional ordnance. From FY 1982 to FY 1988, with the Congress's support, annual real growth in funding for sustainability programs averaged over 7 percent.

3. Defense Program Update

a. Power Projection Forces

(1) Aircraft Carriers

Full funding by the Congress in FY 1988 for two more nuclear-powered aircraft carriers has provided a more economical and less risky means of maintaining our force of aircraft carriers over the next decade. Given current force-level projections, we can now plan to retire the USS Midway in the mid-1990s, at a more realistic age of about 52 years, versus 56 years under the previous plan. The additional procurement will also permit the first of the large-deck Forrestal-class carriers to be retired after about 45 years of service -- the lifespan that was originally projected for them when we undertook the carrier service-life extension program (SLEP) in 1981.

(2) Battleships

The wisdom of reactivating our four battleships was demonstrated again last year when the USS Missouri deployed to the Indian Ocean/North Arabian Sea in response to the need for an increased U.S. presence in the Persian Gulf area.

The Pioneer remotely piloted vehicle (RPV) concept was successfully tested in 1987, and the system is now deployed on the battleship Iowa, where it is undergoing further operational and engineering evaluation.

(3) Sea-Launched Cruise Missiles

Nuclear and conventional Tomahawk Land Attack Missiles (TLAMs) are now entering the fleet in sufficient numbers to provide a potent dispersed land-attack capability. By 1992, some 135 submarines, battleships, cruisers, and destroyers will be capable of putting nearly 2,000 TLAMs to sea.

(4) Amphibious Forces

The versatility of amphibious shipping has been demonstrated in our Persian Gulf operations, with an ensuing high demand for these platforms in a variety of roles.

There have been no major changes in our amphibious assault force programs since last year. The four key programs remain the LHD-1; the LSD-41 (Cargo Variant); the Landing Craft, Air Cushioned (LCAC); and the MV-22 Osprey tilt-rotor aircraft.

Delivery of our first LHD-1 is scheduled for the spring of 1989. A contract for the second LHD, which included options for two additional ships, was awarded in FY 1986. The third ship was authorized in the FY 1988 budget, and the two additional ships needed to meet the Marine Amphibious Force (MAF) plus Marine Amphibious Brigade (MAB) Assault Echelon (AE) lift goal are planned for authorization in FY 1989 and FY 1991. Additional ships will be required in later years to offset LPH retirements, which are scheduled to begin in the mid-1990s.

The LSD-41 (Cargo Variant) will carry more cargo than the basic LSD-41 in exchange for fewer LCAC spaces. Six of these ships are needed to meet our lift objective. Fiscal constraints

precluded inclusion of the sixth ship in the amended FY 1989 budget or FY 1988-92 shipbuilding plan, thereby delaying attainment of our amphibious-lift objective until 1997.

Procurement of at least 90 LCACs is planned to satisfy MAF + MAB/AE lift requirements. Twelve of these craft have been delivered to date. Following the successful completion of operational testing last spring, the Navy awarded contracts for the 17 craft authorized in FY 1985 and 1986. Those awards had been delayed by reliability problems experienced during earlier tests.

The MV-22 Osprey tilt-rotor aircraft program remains on track, and promises to provide significant increases in operational capability, reliability, and survivability. Advance procurement funding is being requested in FY 1989, and the first MV-22 squadron is scheduled to be fielded in FY 1992.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
CVN Aircraft Carrier Procurement:			
Quantity	--	2	--
\$ Millions	--	6,325.0	
CV Service Life Extension Program Procurement:			
Quantity	--	1	--
\$ Millions	83.5	729.8	135.4
Tomahawk Missiles Procurement:			
Quantity	324	475	510
\$ Millions	735.1	868.9	733.4
Harpoon Missiles Procurement:			
Quantity	96	124	138
\$ Millions	138.5	153.0	176.6
LHD-1 Procurement:			
Quantity	--	1	1
\$ Millions	35.0	752.9	737.5

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
LSD-41 Variant			
Procurement:			
Quantity	--	1	--
\$ Millions	--	258.0	--
LCAC			
Procurement:			
Quantity	--	--	9
\$ Millions	--	36.5	192.6

b. Antisubmarine Warfare (ASW) Forces

(1) ASW Master Plan

The dramatic improvements in the Soviet submarine force witnessed in recent years, particularly in sound quieting, mandated the development of a new ASW investment strategy. As directed by the House Committee on Appropriations, the Navy submitted to the Congress in April 1987 an ASW Master Plan justifying the acquisition plans, costs, and schedules of all major ASW programs for FY 1988 and beyond. The plan will be updated annually to ensure it remains as responsive to the threat as budgetary conditions permit.

(2) Maritime Patrol Aircraft

We have made some changes in the P-3 program due to a lack of competition for the "G" model of the aircraft described in last year's report. The Long-Range Air ASW Capability Aircraft (LRAACA) is now planned to succeed the P-3C as the Navy's airborne land-based ASW system. In developing this new aircraft, the Navy will consider derivatives of commercial airframes, as well as modified versions of the P-3. The LRAACA will be designed to carry larger payloads than those of the existing P-3C, and the competition calls for a desired increase in the plane's radius-of-action to 1,600 nautical miles. In evaluating the alternative designs, we will stress overall cost-effectiveness in performing future maritime patrol missions.

The additional P-3C procurement funds voted by the Congress in FY 1988 will enable P-3 production to be sustained as a hedge against any delays in LRAACA's development.

(3) Attack Submarines

The first of our improved SSN-688-class submarines, equipped with the AN/BSY-1 submarine combat system, will reach the fleet in 1988. With its delivery, we will have reached our goal of 100 attack submarines. Continued production of three to four submarines per year will be required to maintain a 100-ship force with qualitative superiority over Soviet submarines.

The recent illegal transfer of valuable antisubmarine warfare technology to the Soviets further highlights our need to maintain a vigorous attack submarine program. The new SSN-21 submarine will meet that need. Competition between the two major submarine builders remains strong as the SSN-21 proceeds toward its initial authorization date in 1989. The prime contractor for the submarine's combat system has been selected, and will begin full-scale development of it early this year. The additional funds voted by the Congress for attack submarine development in FY 1988 will support research on advanced submarine technologies, including potential follow-ons to the SSN-21. The FY 1988 authorization required detailed reports on how this additional funding would be obligated, with the stipulation that SSN-21 development funds would be withheld if the reports were overdue. We plan to submit the reports on time and anticipate no delays in the acquisition schedule for the SSN-21.

(4) ASW Weapons

The MK-48 Advanced Capability (ADCAP) torpedo has been approved for limited production following completion of a successful at-sea testing program. Design difficulties, however, have dictated a restructuring of the MK-50 torpedo program. We now anticipate cost increases and a 21-month delay in the MK-50's full-scale development program. The restructured program will ensure that the torpedo is reliably designed and vigorously tested prior to entering production.

We have decided to defer development of the Sea Lance ASW standoff weapon until a significant number of new submarines are available to utilize the missile's increased range. The limited tests funded by the FY 1989 budget will permit work on the missile to be resumed expeditiously once the system's advanced technologies can be fully exploited.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
TAGOS			
SURTASS Ships			
Procurement:			
Quantity	4	--	4
\$ Millions	176.5	--	159.6
FDS			
Development:	27.3	64.6	104.9
\$ Millions			
SSN-688			
Procurement:	4	3	2
\$ Millions	2,229.2	1,676.9	1,493.6
SSN-21			
Development:			
\$ Millions	240.5	210.0	195.1
Procurement:			
Quantity	--	--	1
\$ Millions	375.0	257.6	1,488.0
Sea Lance			
Development:			
\$ Millions	105.6	105.0	50.0
SH-60B/F			
Helicopters			
Procurement:			
Quantity	24	24	24
\$ Millions	395.4	460.1	506.7
MK-48 ADCAP			
Procurement:			
Quantity	50	100	261
\$ Millions	247.7	255.7	443.0
MK-50 Torpedo			
Development:	173.0	140.6	134.7
Procurement:			
Quantity	--	16	140
\$ Millions	65.4	108.8	198.5
P-3			
Procurement:			
Quantity	9	6	--
\$ Millions	382.6	214.6	1.9

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
ROTHR			
Procurement:			
Quantity	--	1	2
\$ Millions	--	88.1	163.6
CG-47 Cruiser			
Procurement:			
Quantity	3	5	--
\$ Millions	2,656.2	4,127.0	--
DDG-51 Destroyer			
Procurement:			
Quantity	2	--	3
\$ Millions	1,730.4	5.5	2,207.3
SM-2 Missile			
Procurement:			
Quantity	1,194	1,310	1,635
\$ Millions	698.8	598.5	700.5
LRAACA			
Development:			
\$ Millions	--	1.8	69.1

c. Anti-air Warfare (AAW) Ships

The Congress has authorized funds for 27 CG-47-class cruisers and three DDG-51-class destroyers to date. The amended FY 1989 program procures three additional DDG-51s. Unfortunately, that rate of production will not keep pace with projected retirements of older AAW ships, resulting in a shortfall of at least 20 ships throughout the next decade. Continued production below the rate of five AEGIS ships per year will exacerbate this shortfall.

d. Mine Warfare and Support Forces

Although we would look to our allies to perform the majority of mine-countermeasures operations in any major conflict, we must still maintain a capability to conduct mine-countermeasures operations in our home ports and areas overseas where allied assistance might not be available. Recent operations in the Persian Gulf confirm the validity of this approach. For this reason, the Navy has undertaken several programs -- described in

previous reports -- to revitalize its mine warfare capabilities. Key among these are the MCM-1, MHC-51, and MH-53E programs.

The Navy took delivery of its first MCM-1 mine counter-measures ship in 1987, and two more MCM-1s may join the fleet this year. Funds for the last three ships in the 14-ship program were requested in FY 1988. The Congress denied the funding, citing concerns about construction delays. We will examine this program in the context of our overall review of the FY 1990-94 defense program in order to determine how to proceed with procurement of the remaining ships.

A contract for our first MHC-51 minehunter was awarded last spring, and we expect the ship to enter service in 1991. Funding for the second and third of a planned force of 17 MHC-51s was included in the FY 1989 budget submitted last January. The Naval Reserve will receive all 17 MHC-51 ships, along with the 14 MCM-1s, after each ship has spent 12 months in the active fleet.

Seventeen MH-53E helicopters have been funded to date, and the first deliveries were made in 1987. The FY 1988/FY 1989 budget funded the remaining 15 aircraft in the program.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
MCM-1 Ships			
Procurement:			
Quantity	--	--	--
\$ Millions			
MHC-1 Ships			
Procurement:			
Quantity	--	--	2
\$ Millions	--	--	197.2

e. *Combat Logistics Forces*

Four of the Navy's new TAO-187-class fleet oilers have been delivered, seven more are under construction at two shipyards, and we are preparing to award contracts for the two ships authorized in FY 1988 early this year. Three of the four ships being built at one of the yards have encountered cost and schedule problems. These ships are being built on "Cost Plus Incentive Fee" contracts. The first of the ships has slipped 12 months relative to its original delivery date, and the second has slipped four

months, with further delays expected. The ships are budgeted at target cost, and the first three are exceeding the target amounts. The Navy requested funding last September to cover its share of the cost growth on the three ships, but the Congress has not yet acted on the request.

The five-ship AO (Jumbo) conversion program is designed to expand the oil-carrying capacity of existing fleet assets, thereby eliminating the need for two of the TAO 187s. Funds for the lead ship were appropriated in FY 1987, and we expect to award a contract early this year. In FY 1989 we are requesting funds for the second of the four AOE-6-class fast support ships contained in the original FY 1988-92 Shipbuilding Plan. The first two of a new class of ammunition ships are also included in the five-year plan. These ammunition ships are urgently required to provide the combat sustainability required by our newly expanded fleet.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
AOE-6			
Support Ships			
Procurement:			
Quantity	1	--	1
\$ Millions	497.0	--	363.9
TAO-87 Oilers			
Procurement:			
Quantity	2	2	2
\$ Millions	257.0	256.4	284.9

4. CONCLUSION

We have made substantial progress over the past seven years toward our goal of a modern, expanded Navy. Unfortunately, fiscal realities have required reductions both in force structure and in acquisition programs. We have made these reductions with great reluctance, and only after a thorough review of the available options. Our overriding criterion has been to maintain a ready, sustainable force. Wherever possible, we have made programmatic adjustments designed to minimize any increase in the risks to our security; as funding levels are reduced, however, some increase in risk will occur.

We make every effort to get the most defense capability out of each dollar through competitive procurement and other management efficiencies. Construction of modern surface combatants at rates

indicated for the near term, however, will not keep pace with retirements of older ships, leaving the Navy short of the number of ships needed to meet wartime requirements, and with less than an optimal mix of ships. Shortfalls in support and mine warfare forces will continue into the mid-to-late 1990s. These problems translate into increased risks for U.S. security.

Table III.B.2

FY 1988-92 Shipbuilding Program

	Subject to Further Review					FY88-92 Five-Year Total
	FY 1988	FY 1989	FY 1990	FY 1991	FY 1992	
New Construction						
Trident (Ballistic Missile Submarine)	1	1	1	1	1	5
SSN-688 (Attack Submarine)	3	2	2	2	1	10
SSN-21 (Attack Submarine)	—	1	—	2	2	5
CVN (Aircraft Carrier)	2	—	1	—	—	3
CG-47 (Guided Missile Cruiser)	5	—	1	—	—	6
DDG-51 (Guided Missile Destroyer)	—	3	3	5	6	17
LHD-1 (Amphibious Ship)	1	1	—	1	—	3
LSD-41 (Landing Ship Dock-Cargo Variant)	1	—	1	1	2	5
MCM-1 (Mine Countermeasures Ship)	—	—	—	—	—	—
MHC-1 (Coastal Minehunter)	—	2	3	3	4	12
PXM (Patrol Craft)	—	—	1	—	4	5
AOE-6 (Fast Combat Support Ship)	—	1	—	2	—	3
AE-36 (Ammunition Ship)	—	—	—	1	1	2
ARS (Salvage Ship)	—	—	1	—	—	1
TAO-187 (Fleet Oiler)	2	2	2	1	—	7
TAGOS (Surveillance Ship)	—	3	3	2	—	8
AGOR (Research Ship)	—	1	2	4	—	7
	15	17	21	25	21	99
Conversions/SLEPs						
CV (Aircraft Carrier) SLEP	1	—	—	1	—	2
AO (Oiler) Conversion	1	2	1	—	—	4
TACS (Crane Ship) Conversion	2	—	—	—	—	2
	4	2	1	1	0	8

Notes: 1. The FY1990-1992 portion of this table is identical to the one provided with the FY1988-1989 President's Budget. Adjustments to these outyears can be anticipated based on Congressional actions in FY1988 and further DoD reviews.
2. Chart reflects shipbuilding program as amended by FY1988 Congressional action and FY1989 adjustments.

C. TACTICAL AIR FORCES

1. Introduction

Tactical air forces remain a powerful, flexible element of our conventional deterrent. Designed to deploy rapidly from land bases or aircraft carriers, tactical aircraft can conduct and support a wide range of military operations against both air and surface targets. To perform their missions effectively, the forces must have modern, capable aircraft and weaponry; ample stocks of spare parts and supplies; and highly trained aircrews.

Since we require our tactical air forces to perform a variety of tasks in support of our national military strategy, we must acquire an effective mix of aircraft that offer a wide range of capabilities. These include fighter, attack, and support aircraft. While we had hoped to continue pursuing improvements in force structure, combat readiness, and sustainability, fiscal constraints have forced us to preserve combat readiness and sustainability by reducing our force structure.

Our essential flight training program is being sustained in FY 1989 at the same satisfactory pace as was approved for FY 1987, protecting near-term force readiness. War reserve munitions acquisition also is being continued, thereby enhancing sustainability. But force structure is being reduced. Since our forces are sized to meet threats to our national interests at a prudent level of risk, the force structure reductions carry with them a concomitant increase in the risks to our security.

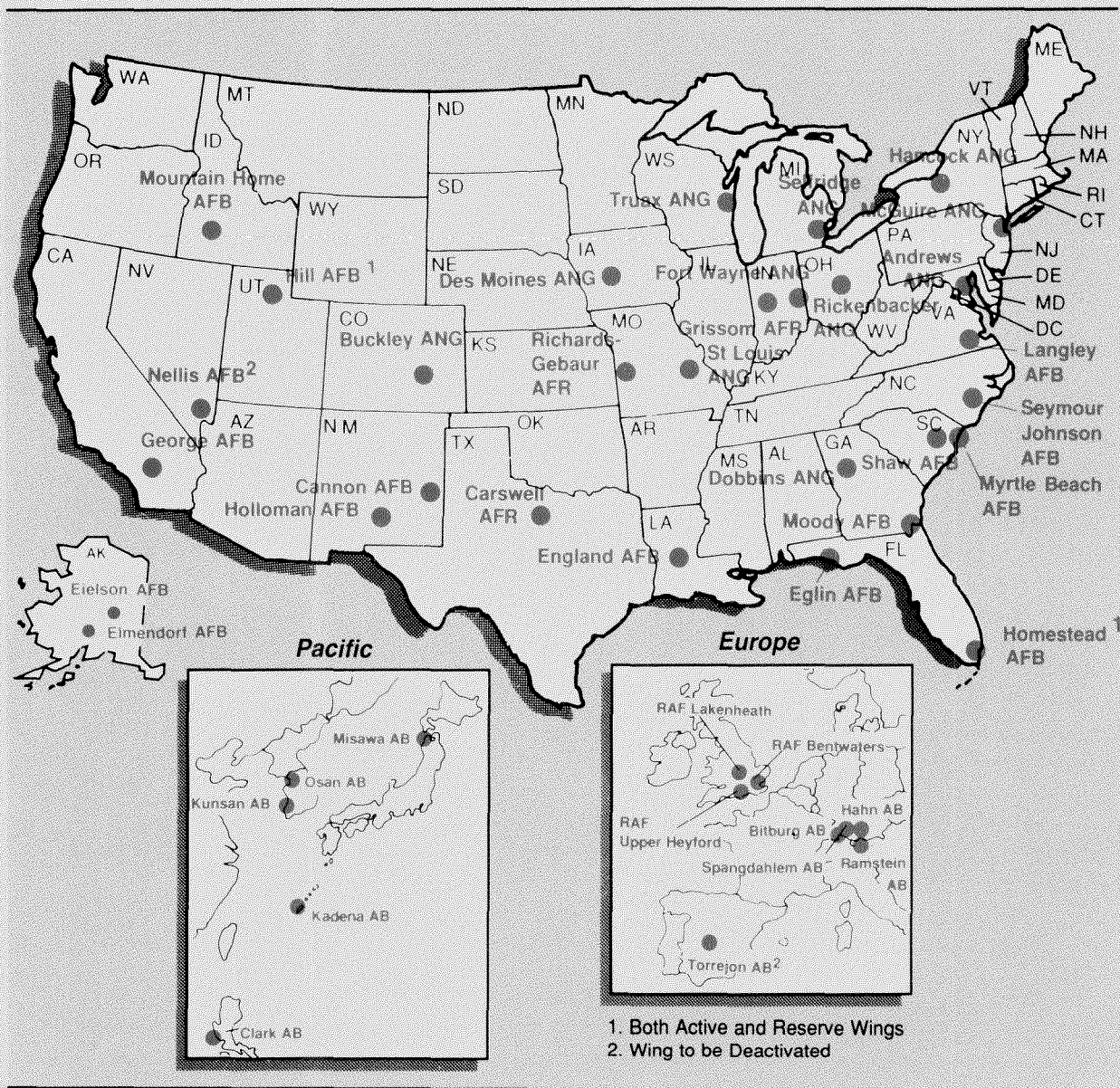
2. Force Structure

a. Air Force

The Air Force currently has almost 38 tactical fighter wings, based as shown in Chart III.C.1.

Due to cuts in funding, the force structure will be reduced by the equivalent of one and one-half wings in FY 1989. We will begin deactivating the wings at Nellis Air Force Base, Nevada, and tentatively, Torrejon Air Base in Spain, completing the deactivations in FY 1990. At the same time, we are planning to accelerate the modernization of our reserve forces, replacing older-model F-4s and A-10s with the more capable F-16.

Locations of USAF Tactical Fighter Wings



Should we find a suitable European base for the 401st Tactical Fighter Wing, we will recommend another wing for deactivation, since the capability of the 401st is vitally important for the defense of NATO's southern flank. Prospects look promising at this point.

Additional aircraft in several different reserve squadrons will be cut in FY 1990, leaving us with about 35 tactical fighter wings at the end of that year. This force level will allow us to

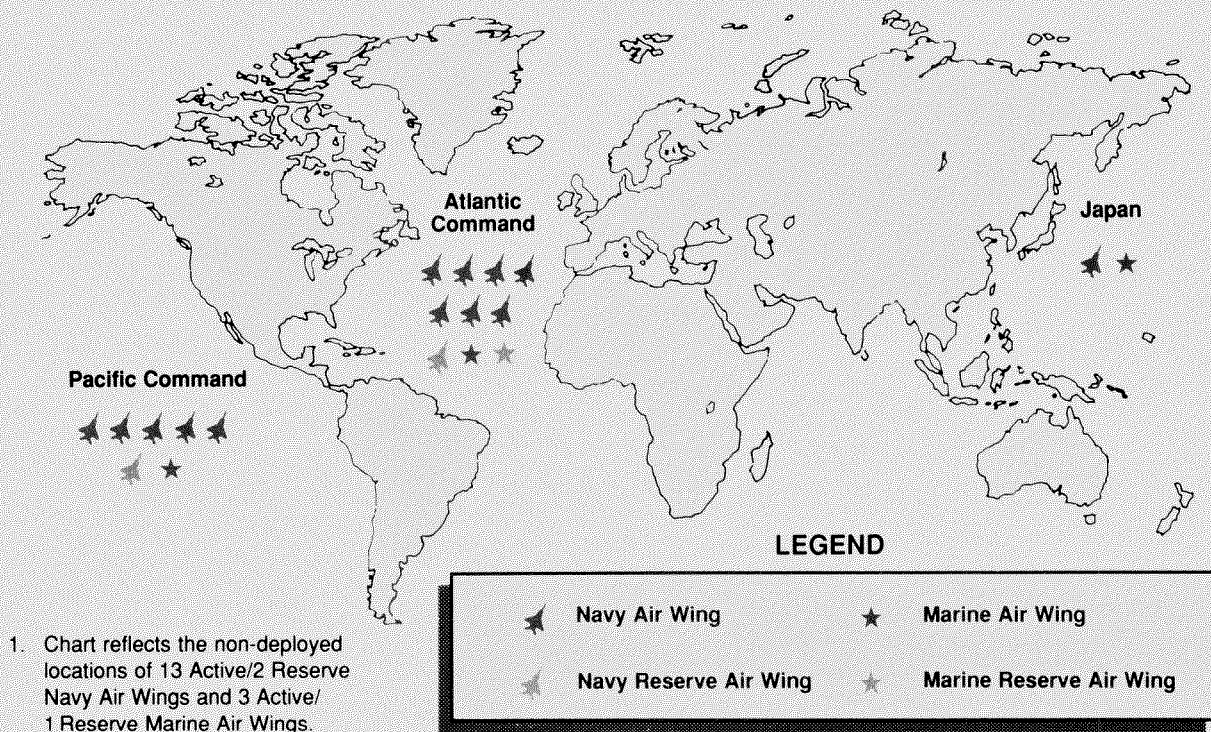
sustain a realistic level of combat capability with the limited funds available.

b. Navy and Marine Corps

Our Navy and Marine Corps air wings are based afloat and ashore worldwide, as shown in Chart III.C.2.

Chart III.C.2

Disposition of Navy and Marine Corps Air Wings¹



The Navy's aviation force structure will be reduced in FY 1989 by one active carrier air wing, reflecting the new fiscal limits. Accordingly, the Navy will increase its reliance on reserve wings to equip its aircraft carriers in the event of a crisis. (The Navy previously had planned for its fifteenth deployable carrier to rely on one of the reserve wings for its air group; we now are planning full immediate afloat allocation of both reserve wings during a contingency.) The reduction of one active air wing will allow us to continue to provide adequate

training support for the remaining wings, while keeping their peacetime operating tempos at acceptable levels.

3. Defense Program Update

a. Combat Readiness and Sustainability

Over the past seven years, we have placed great emphasis on improving the readiness and sustainability of our forces. Regrettably, these programs are often viewed as easy targets for budget cuts. In FY 1989, we have protected the readiness of our tactical aircrews, funding the planned FY 1989 flying-hour program and associated peacetime operating spares. We have also kept munitions funding at a level commensurate with FY 1988 funding enacted by the Congress.

The readiness of our tactical air forces has never been higher. In FY 1989, Navy and Marine Corps aircrews will average 25 hours of flying time a month, and their Air Force counterparts about 20 hours -- meeting our readiness goals. A cutback in the flying-hour program would reduce our ability to train our personnel at the levels required for them to remain proficient at their skills, and could greatly exacerbate the pilot-retention problem. It is for these reasons that we have rejected flying-hour reductions as a means of meeting lower FY 1989 budget limits.

Participation in training exercises -- another important contributor to readiness -- also will be maintained at acceptably high levels in FY 1989. Joint-service exercises provide our forces the most realistic training anywhere, short of actual combat. As noted in our FY 1988 report, we continue making excellent use of exercise series such as RED FLAG and FLEETEX in training our Air Force and naval aviators.

b. Force Modernization

We continue to maintain the average age of our tactical fighter aircraft at our goal of about ten years. Annual procurement levels are sufficiently high to continue meeting that goal at least through FY 1992.

I have directed the Air Force and Navy to explore advanced derivatives of the F-16 and F/A-18 aircraft, respectively. This effort is aimed at addressing the evolving threat of the 1990s, and at providing candidates, through cooperative development, for our allies' future fighter requirements. The derivative aircraft represent a long-run complement to our new-generation tactical

aircraft -- the Air Force's Advanced Tactical Fighter (ATF) and the Navy's Advanced Tactical Aircraft (ATA). Since fiscal constraints will prevent us from buying as many of these technologically superior aircraft as we will require, developing advanced versions of existing F-16 and F/A-18 designs offers a means of enhancing our overall tactical air capabilities while minimizing acquisition costs. The ATF program has been restructured to reduce risk and provide for initial procurement of the aircraft in FY 1993, one year later than previously planned. The ATA offers us unique advantages for long-range attack. Accordingly, we have decided to pursue it as a joint program.

In view of budget constraints, the Air Force has begun phasing-down procurement of the multi-role F-15E, reducing its annual buy to 36 aircraft in FY 1989 and 30 in FY 1990.

Naval aircraft procurement programs also have been altered. In lieu of the A-6F program, which was denied authorization by the Congress in FY 1988, we will instead upgrade a limited number of A-6Es. This upgrade will enable the A-6E to continue playing an important role in our all-weather attack force until the ATA completely replaces it early in the next century.

The Marine Corps has restructured its AV-8B Harrier program to provide for procurement of the aircraft under a multiyear contract from FY 1989 through FY 1991. Although the revised procurement plan will not achieve the original acquisition objective of 328 aircraft, it represents a solid balance between fiscal resources and combat capability at this time. Operational experience with the AV-8B indicates that the aircraft is safer than previously projected. The aircraft's low-attrition rate, coupled with the restructured procurement plan, will allow us to equip fully all eight programmed combat units, plus a training squadron. We will continue to monitor AV-8B attrition over the next few years to determine if additional procurement is needed to sustain the Marine Corps' force structure.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
F-15			
Development:			
\$ Millions	153.3	105.6	89.1
Procurement:			
Quantity	42	42	36
\$ Millions	1,766.6	1,560.7	1,505.9

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
F-16			
Procurement:			
Quantity	180	180	180
\$ Millions	2,917.7	2,788.7	3,709.1
LANTIRN			
Procurement:			
Quantity	150	250	471
\$ Millions	761.4	741.4	688.2
IIR Maverick			
Procurement:			
Quantity	3,224	2,700	2,540
\$ Millions	363.7	298.3	270.2
AMRAAM			
Procurement:			
Quantity	180	400	1,470
\$ Millions	582.4	673.1	831.0
AIM-9M			
Procurement:			
Quantity	744	956	760
\$ Millions	40.4	61.1	48.3
F-14			
Development:			
\$ Millions	278.8	164.0	167.7
Procurement:			
Quantity	15	12	12
\$ Millions	679.4	816.9	910.0
F/A-18			
Procurement:			
Quantity	84	84	72
\$ Millions	2,664.7	2,399.8	2,359.3
A-6			
Development:			
\$ Millions	189.9	215.5	--
Procurement:			
Quantity	11	--	--
\$ Millions			

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
AV-8B			
Procurement:			
Quantity	42	24	24
\$ Millions	624.1	610.7	568.4
Laser Maverick			
Procurement:			
Quantity	--	1,300	--
\$ Millions	5.6	157.3	--
AIM-54A/C			
Procurement:			
Quantity	205	350	560
\$ Millions	289.3	344.2	465.5

c. Electronic Combat

As the threat continues to grow in sophistication, so must the capabilities of the electronic combat (EC) systems supporting our tactical air forces. We are pursuing a number of improvements in this area, including a significant joint-service program called "Tacit Rainbow." This program entails development of a jet-powered drone that could be used to attack enemy surface-to-air radars threatening our air missions. The system will complement our other EC efforts in improving aircraft survivability and enhancing mission effectiveness. Tacit Rainbow is intended to be deployed in great numbers, capitalizing on simplicity and advanced manufacturing techniques for comparatively low unit cost. We intend to deploy both air- and ground-launched variants, the ground-launched variant freeing our tactical aircraft for other missions.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
Compass Call			
Procurement:			
Quantity	--	--	--
\$ Millions	33.3	15.0	18.4
EA-6B			
Development:			
\$ Millions	50.1	65.6	26.6
Procurement:			
Quantity	12	12	12
\$ Millions	411.9	454.8	491.9

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
HARM			
Procurement:			
Quantity	2,398	2,411	2,200
\$ Millions	600.6	554.1	518.8
INEWS/ICNIA			
Development:			
\$ Millions	122.3	101.8	127.8
ASPJ			
Procurement:			
Quantity	6	24	197
\$ Millions	90.0	250.6	409.8

d. Target Acquisition, Surveillance, and Reconnaissance

We have revised several programs to respond to changes in the threats we face, while meeting tighter fiscal constraints. The Air Force will begin a major near-term enhancement of the E-3 Airborne Warning and Control System's (AWACS) radar to improve its detection performance. The upgrade will increase the radar's detection range against existing aerial targets, as well as against future Soviet aircraft and missiles, which might be significantly harder to detect. The improvements will be incorporated with previously programmed communications and electronic-support measures (ESM) modifications scheduled for installation in the 1990s.

The joint-service Advanced Tactical Air Reconnaissance System (ATARS) continues in full-scale development. The Air Force is responsible for the electro-optical (EO) sensor portion of the ATARS program; it will continue with EO sensor development, but has decided to forgo upgrading existing RF-4C aircraft with the new sensors, given the limited long-term survivability of these aircraft. Instead, other alternatives to meet long-term Air Force tactical reconnaissance needs are being considered. The Navy is continuing work on its portion of the program, an unmanned reconnaissance platform. Both Services expect to announce their decisions on sensor and platform designs in FY 1989.

The Joint Surveillance Targeting and Attack Radar System (Joint STARS) will initially be installed on modified Boeing 707 aircraft, designated E-8As. Delays in the radar's development may force a slip in the acquisition schedule, but we believe the

system will meet all of its original performance goals. We are currently examining the employment requirements for this system.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
E-3A Modification			
Development:			
\$ Millions	99.1	94.6	174.8
Procurement:			
Quantity	--	--	--
\$ Millions			
ATARS			
Development:			
\$ Millions	17.7	42.8	56.6
JSTARS			
Development:			
\$ Millions	297.2	346.6	238.1

4. Conclusion

Our FY 1989 programs for the tactical air forces emphasize investments in readiness and sustainability that will enable us to meet our combat requirements to the greatest extent possible in a fiscally constrained environment. In partnership with the Congress, we will make every effort to ensure that our tactical air forces support our national military strategy and preserve the common defense.

D. FORCE PROJECTION

1. Introduction

a. Strategy and Missions

Our strategy of forward defense, outlined in Chapter I.C., continues to serve us well. The essential elements -- active forces serving as the vanguard of our response to aggression, reserve forces capable of mobilizing quickly, and projection forces capable of rapidly transporting these forces to the location of a conflict -- serve the national interest by maximizing our deterrent capability at fiscally affordable levels.

We must accord to our active, reserve, and projection forces the planning, resource-allocation, and training priority they require to mobilize, deploy, and perform their missions effectively in war.

2. The Mobilization Process

Our ability to mobilize rapidly and efficiently is as important to deterrence as the capability of the forces themselves, and directly affects potential adversaries' perceptions of our resolve. Should deterrence fail, our success at mobilizing for war and rapidly reinforcing our active forces could directly influence a conflict's outcome. To deploy military forces rapidly in wartime, we must prepare for mobilization in peacetime.

a. Wartime Manpower Planning

Our Wartime Manpower Planning System (WARMAPS) was developed to provide a consistent methodology for establishing time-phased military and civilian manpower requirements, and for identifying specific shortfalls during a mobilization. The system uses data developed by the Services detailing their requirements for, and projected supplies of, manpower at various points in a wartime scenario. These data provide the basis for identifying problems and formulating solutions to them. We are quite pleased with the development of such an essential system for wartime planning, and with the credibility and utility of our WARMAPS data.

Chart III.D.1

**Military Manpower Demand and Supply:
All DOD - FY 1988**

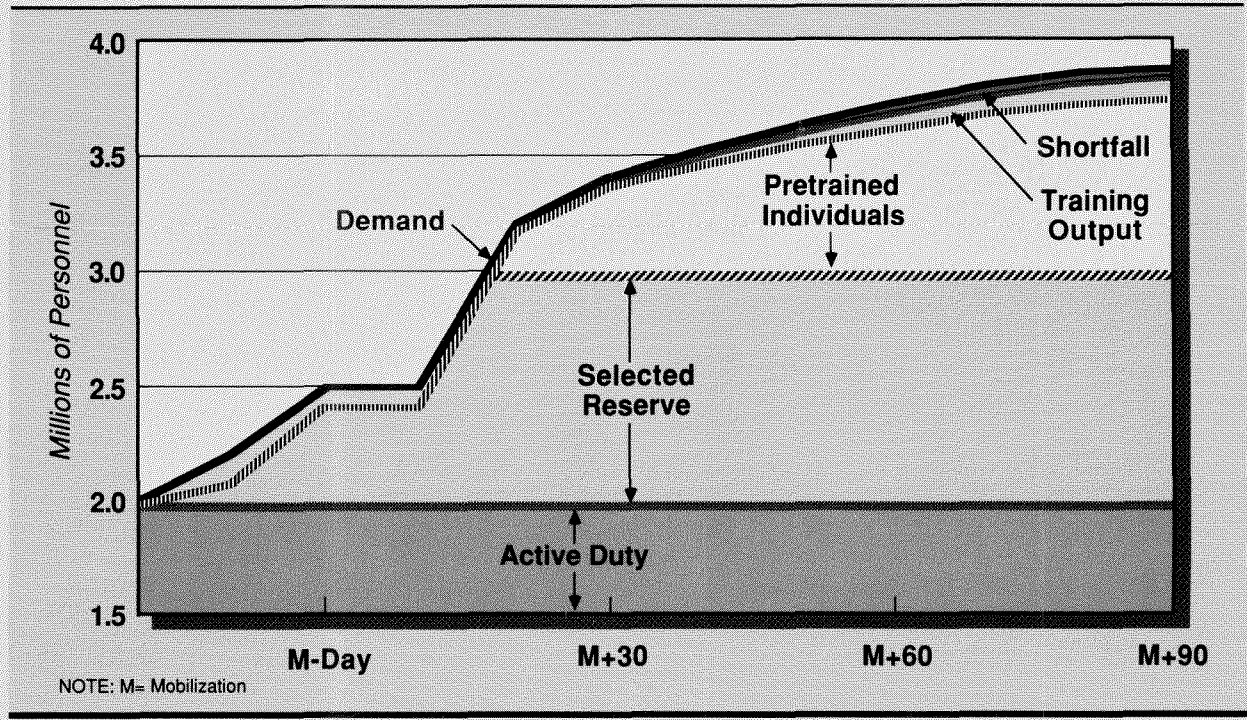
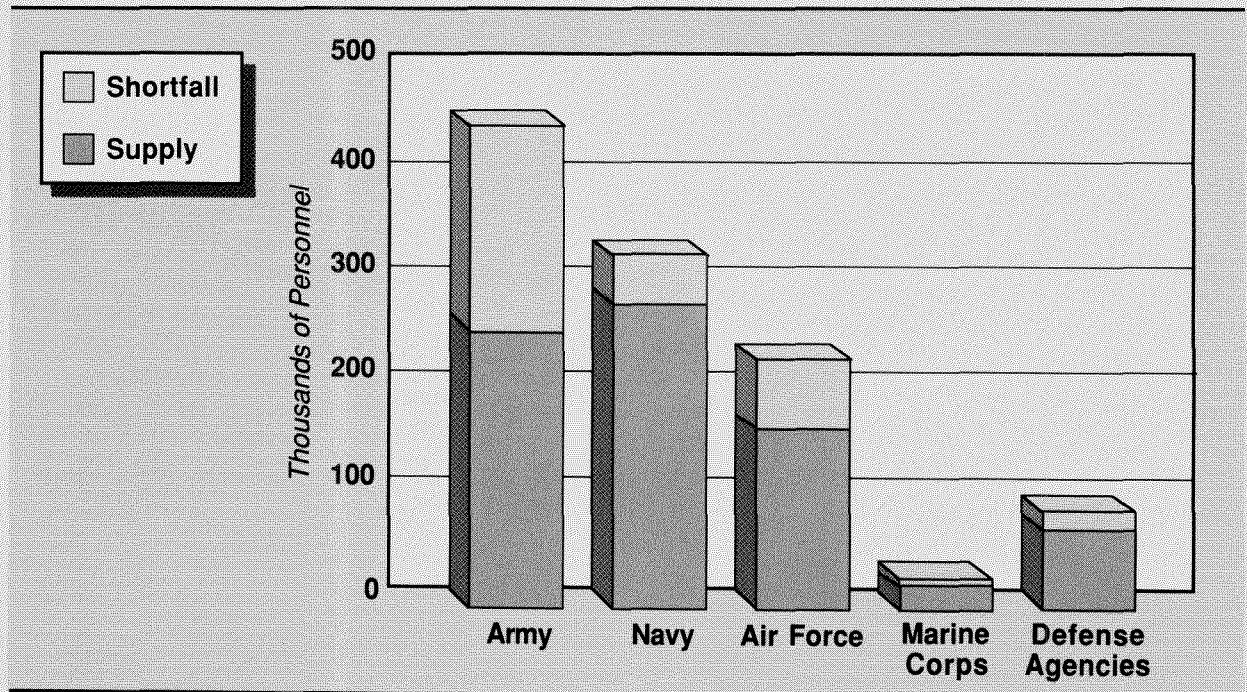


Chart III.D.2

Civilian Manpower Status: All DOD at M + 30



Tables III.D.1 and III.D.2 display current WARMAPS supply and demand data for military and civilian manpower, assuming a world-wide conflict scenario.

b. Military Manpower for Mobilization

We are continuing to make full use of all available manpower resources in our mobilization planning. In deciding on the proper mix of active and reserve forces, we must consider both our peacetime forward deployments and other peacetime missions for which only active forces are appropriate. Further, we must ensure that adequate forces, both active duty and reserve, are available to reinforce our forward-deployed units promptly, and to deploy to other trouble spots where U.S. forces are not routinely stationed. In the event of a mobilization, the strength of our military forces -- both active and reserve -- would need to be increased quickly.

In the Selected Reserve, units would mobilize and deploy almost immediately alongside active-duty units. The missions of these forces demand that they be as capable and ready as their active-duty counterparts. The Individual Ready Reserve (IRR) would be used to bring active and reserve units to their authorized wartime strength, and to replace any untrained or partially trained unit members and initial casualties. We have established policies that will ensure the early availability of skilled IRR members to meet the CINCs' wartime requirements. These policies include annual mandatory screenings, skill proficiency testing, refresher training, mobilization readiness exercises, and personal status updates.

Military retirees represent another important source of wartime manpower. By law, these individuals can be recalled to active duty by their respective Service Secretaries to bring units to wartime strength, to expand our support base in the continental United States (CONUS), or to perform other necessary functions. We are looking into a wide variety of possible assignments for retirees other than their traditional training-related and administrative roles.

In addition to people with prior military training, the Services would require sizable numbers of individuals without military experience in any major war. In the event of a general call-up, the Selective Service System is prepared to deliver inductees to the armed forces as quickly as the training base can absorb them. We are looking into ways of identifying inductees

with skills in critical areas who would require only a bare minimum of military training to contribute to a war effort.

c. Civilian Manpower for Mobilization

Civilian personnel provide services directly affecting the operational readiness of our forces. We are continuing to study ways to use our civilian work force and private-sector contractors more efficiently, in order to free military personnel for duty in combat-ready units. Large numbers of civilian employees in such fields as logistics, communications, health services, and equipment maintenance occupy positions overseas that are essential to wartime operations. We have therefore taken steps to ensure that these people would remain available in an emergency.

We are also putting special emphasis on improving our ability to mobilize the civilian work force. We estimate that during the first 30 days of a mobilization, nearly 300,000 people would have to be added to the civil service to replace employees recalled to active duty, and to meet expanded support requirements. Prior to 1981, there was effectively no guidance or planning for the employment of wartime civilian manpower. Accordingly, we have established standardized civilian manpower data requirements. We also have revised our directives to resolve problems that had been observed in exercises, such as competition with local industry for workers with critical skills, peacetime impediments to wartime recruitment, retention of the peacetime work force during mobilization, and screening the work force for potential losses to military service. We are continuing to review, revise, and expand our guidance in the civilian mobilization area by evaluating test and exercise results and formulating appropriate corrective procedures.

We also need to ensure the continued availability of those foreign nationals we depend on to support our mobilization and war efforts. We have begun a detailed review of our peacetime foreign-national work force, which constitutes fully 10 percent of our civilian work force.

d. Exercises

Exercises remain our primary means of evaluating and verifying mobilization plans, policies, and procedures. We use them to identify problems and deficiencies, and to develop and test solutions. After each exercise, we evaluate the results and develop refinements. Then we test the system again to check our progress. Last fall, for example, as part of exercise PROUD SCOUT 88, the Office of the Secretary of Defense and the Joint Chiefs of Staff

held an exercise in which senior officials and their staffs addressed critical mobilization measures that might be implemented in a crisis.

Our most recent civilian mobilization exercise was conducted last fall on the East and West Coasts. It surpassed past exercises in encompassing a larger number of states (eight in all), and a greater mix of participants (more than 100 military installations, as well as all Services and the Defense Logistics Agency). The exercise highlighted the large demand we would face for new civilian manpower in any major war. We anticipate conducting future annual exercises specifically concerned with testing civilian mobilization plans and identifying areas in which further improvements are needed.

e. Conclusion

We have made significant progress in our total force planning, but more remains to be done. We are always exploring better ways of distributing missions and functions between the Active and Reserve Components, transferring appropriate support functions to the civilian work force and private sector, and making better use of military retirees and inductees. Our goal is to improve our utilization of manpower resources both in peacetime and in war.

3. Deploying The Force

a. Force Projection Goals

The overall goal of our force projection programs is to achieve an ability to deploy adequate forces to counter simultaneous Soviet-bloc offensives in Europe, the Pacific region, and Southwest Asia (SWA). The European and SWA deployment requirements, which remain the greatest challenge to our mobility forces, are updated below.

(1) Europe

Our rapid-reinforcement commitment to NATO requires us to deploy, within ten days of a decision to mobilize, a total of ten Army divisions (of which four, plus two armored cavalry regiments, are stationed in Europe in peacetime), 60 reinforcing tactical fighter squadrons, and one Marine Amphibious Brigade (MAB), plus support detachments for all of these forces. To meet that deployment timetable, we must preposition quantities of equipment in Europe, together with munitions and supplies to sustain our forces

until sea lines of communication can be established. The forces themselves and any residual items of equipment can then be air-lifted to the theater. Sealift, augmented by allied shipping, would deploy the follow-on forces, as well as carry the bulk of materials needed to resupply our forces over the course of a conflict. If forces had to be deployed simultaneously to one or more other theaters, we would rely even more heavily on allied shipping to reinforce and resupply NATO.

(2) Southwest Asia

The events of the past year have lent increased urgency to our efforts to solve the problems that complicate a SWA deployment. The great distances our forces must traverse, coupled with the volatility of the region, make rapid deployment most difficult. It will be possible only if we complete our prepositioning and force improvement programs, continue receiving modest support from friendly nations in the area, and respond promptly to warning of imminent aggression. Our objective of responding to a major Soviet or Soviet-surrogate incursion in a timely fashion after being asked for assistance is achievable, provided that we continue on our present course.

b. Force Structure Goals

Our intertheater mobility goals remain unchanged from those reported last year. During the past year, we have focused increased attention on our ability to transport forces within theaters and support them once deployed. The Worldwide Intra-theater Mobility Study (WIMS), which will shortly be forwarded to the Congress, provides the first integrated look at our requirements and capabilities (including assistance expected from host nations for supporting forces in a multitheater scenario). We have used WIMS to structure goals for the FY 1990-94 defense program; its first impact on specific programs will become apparent in the FY 1990-91 budget.

c. Current Force Structure

With the Congress's support, our FY 1988 program is in the process of achieving its promised 73 percent of our goal of moving 66 million ton-miles of equipment daily by air. Our sealift fleet can now meet 85 percent of our goal of transporting one million tons of unit equipment in a single voyage.

Our prepositioning programs have also kept pace with our plans. During this year, we will have increased the amount of

Army unit equipment prepositioned in Europe from 478,000 tons to 544,000 tons.

Despite these recent improvements, however, strategic lift shortfalls persist, and will become larger in future years due to a projected decline in civilian sealift capacity. This adverse trend is a result of the significant reductions in the U.S. and NATO merchant marines, on which we have traditionally depended to carry sizable amounts of unit equipment in a war. We are working closely with our allies to examine the causes of these trends and to take the necessary steps to reverse them. Some of the solutions we have used in the past, such as RRF and containership enhancements, are being studied to see how much of an impact they would have on reducing the shortfalls. We are also examining some of the economic factors associated with the decline in the U.S. maritime industries, in an effort to identify any policy changes needed to reinvigorate them.

d. Assistance from Allies

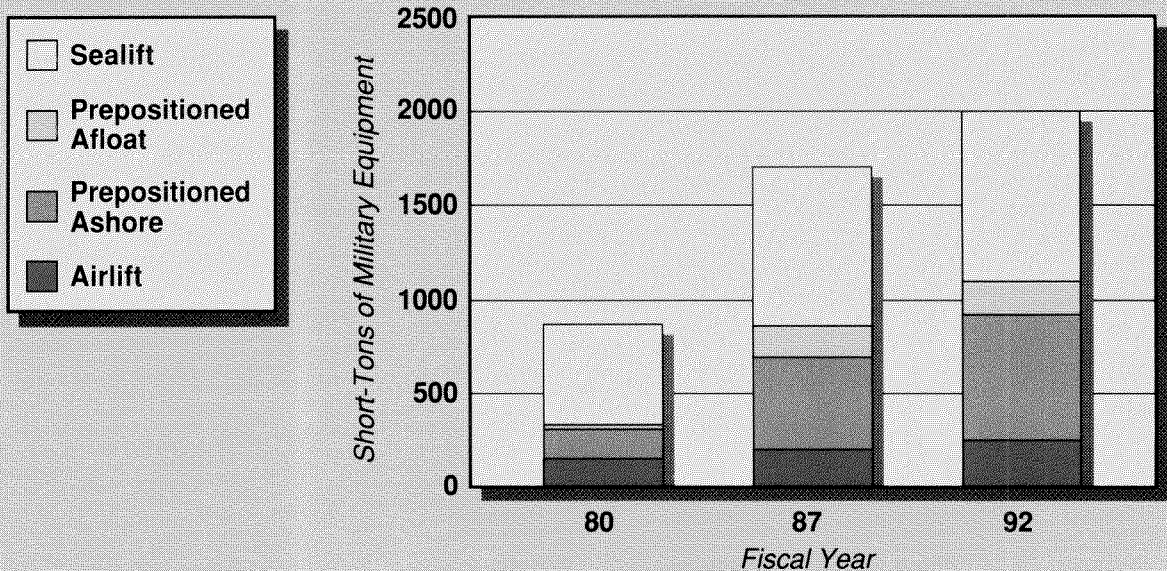
Allied support remains essential to our success in any worldwide conflict. Ships and aircraft contributed by our NATO allies would provide critical support for a U.S. reinforcement of Europe, as would shipping assistance from the Republic of Korea for a U.S. reinforcement of that country. Host-nation support would play an equally crucial role in the intratheater movement of our forces, particularly over rail in Europe.

e. Improvements Since 1981

The improvements described in last year's report are programmed to continue through FY 1992. The composite measure of force projection capability presented in Chart III.D.3 was developed for the 1987 Military Status Report; it offers an overview of the combined contributions of prepositioning, airlift, and sealift to our ability to conduct a large-scale, multitheater deployment. The comparisons consider capabilities at the beginning of this Administration, now, and at the end of the program period, assuming continued congressional support for our force-enhancement efforts.

Chart III.D.3

U.S. Force Projection Capability



NOTE: Based on 30 Days of Airlift Operations and a Single Sailing of the Sealift Fleet.

4. Defense Program Update

a. Expansion of Airlift Capability -- The C-17 Program

The FY 1989 budget continues the scheduled procurement of C-17 aircraft. This will permit uninterrupted progress toward our goal of 66 million ton-miles a day.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
C-17 Cargo Aircraft			
Development:			
\$ Millions	615.7	1,115.6	982.0
Procurement:			
Quantity	--	2	4
\$ Millions	49.1	655.3	1,004.0

b. Sealift

The budget supports the continued expansion of the Ready Reserve Force (RRF) but reduces, relative to previously planned levels, procurement of sealift discharge equipment and equipment for modifying containerhips to carry non-containerized cargo. These reductions will diminish our future ability to deploy unit equipment and to land our forces in SWA or other areas where port facilities are inadequate or nonexistent.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
Ready Reserve Force ^a			
Procurement:			
Quantity	13	2	--
\$ Millions	77.8	43.4	--
Sealift Discharge			
Procurement:			
Quantity	2	2	--
\$ Millions	32.6	9.9	15.4
Flat Racks and Sea Sheds			
Procurement:			
Quantity	1,537	1,326	142
\$ Millions	56.2	58.5	21.1

^a Quantities may vary with actual unit costs at time of procurement; funded in FY 1989 in the Maritime Administration budget.

5. Command, Control, and Communications Support for Mobilization

The improvements in command and control reported last year have continued. The most important new development has been the establishment of the U.S. Transportation Command (USTRANSCOM), which brings our airlift, sealift, and road and rail transportation capabilities together for the first time under the control of a single commander. This step, which was complemented by the transfer to the new command of the planning functions of the Joint Deployment Agency, will further strengthen our ability to coordinate mobilization planning, to deploy forces rapidly and support them effectively, and thus to utilize our military capabilities to their best effect.

6. Conclusion

We must continue strengthening our capability to resupply our forward-deployed forces, to reinforce them with combat-ready active and reserve forces, and to project these forces and their equipment anywhere in the world where our interests, or those of our allies, are threatened. In partnership with the Congress, we will continue our steady progress toward our goals.

E. SPECIAL OPERATIONS FORCES

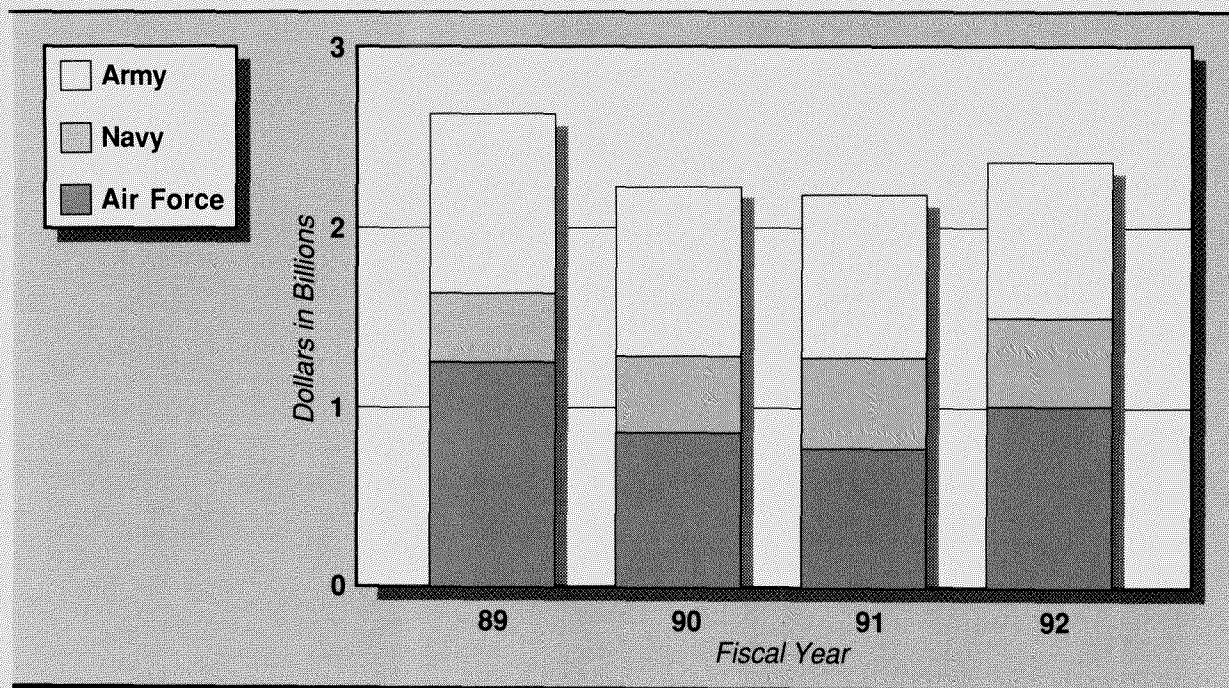
1. Introduction

We have, over the last seven years, made great strides in revitalizing the capabilities of our Special Operations Forces (SOF). Substantial progress has been made in reequipping our SOF with modern equipment, and we remain fully committed to continuing this revitalization until it is completed. Additionally, we have undertaken a major reorganization to institutionalize SOF within the Defense Department. With these revitalization and reorganization initiatives firmly under way, we can also focus our attention on SOF requirements for the next decade and beyond.

2. Revitalization

Chart III.E.1

Special Operations Forces (SOF) Funding



Last year's report outlined our programmed SOF expansion from FY 1981 to FY 1992. These expanded forces will be capable of conducting special operations around the globe. The force will be maintained at a high state of readiness commensurate with its critical peacetime and wartime missions. Since 1981, we have devoted nearly \$9 billion to SOF revitalization. As shown in Chart III.E.1, we have currently programmed another \$9 billion for the FY 1989-92 period. Chart III.E.2. shows that FY 1989 is a critical year in our revitalization effort, both in terms of the delivery of previously funded systems, and in terms of new initiatives. Without congressional support, the completion of SOF revitalization will be in jeopardy.

Chart III.E.2

Major FY 1989 SOF Initiatives

Army

- Procure 5 MH-47Es
- Continue testing 1 MH-47E prototype and 1 MH-60K prototype

Navy

- Deliver 3 HH-60s to the first of two USNR HCS
- Modify 1 SSN to accept the Dry Deck Shelter
- Commission SEAL Team 8
- Commission Naval Special Warfare Units 6 and 8 overseas
- Deliver the third Dry Deck Shelter
- Deliver 2 high-speed boats

Air Force

- Deliver 9 MC-130Hs
- Modify 2 AC-130Hs (SOF improved)
- Modify and Deliver 20 MH-53 H/Js
- Deliver 5 MH-60Gs
- Modify 1 HC-130 P/N Tanker to SOF configuration

Three points must be made to put these expenditures in context. First, our need to make major improvements in SOF is caused both by the neglect of the 1970s, when force structure was being cut, and by the need to deal effectively with terrorism in the 1980s.

Second, we recognize that SOF are an essential element of our national security structure, both in peacetime and at all levels of conflict, and place a high priority on restoring this capability. In 1981, our SOF units were not capable of conducting the critical missions assigned to them. Today, they are far more capable; and in the 1990s, they will be fully capable.

Third, despite rapid funding growth for SOF throughout the 1980s, they still account for less than 1 percent of the DoD budget. Given their vital contribution to our national security, we believe this is an extremely effective use of funds -- a true bargain. In particular, we recognize that highly capable SOF play a critical role in low-intensity conflict -- the most likely threat to our interests for the rest of this century. As the recent performance of selected SOF elements in the Persian Gulf has demonstrated, special operations are also likely to play a key role in a wide variety of contingency operations.

As we complete our rebuilding of SOF in the 1990s, expenditures for SOF will decline. Our goal is to sustain the gains already made to ensure that we preserve this vital capability to meet the threat of the 1990s and beyond.

3. Reorganization

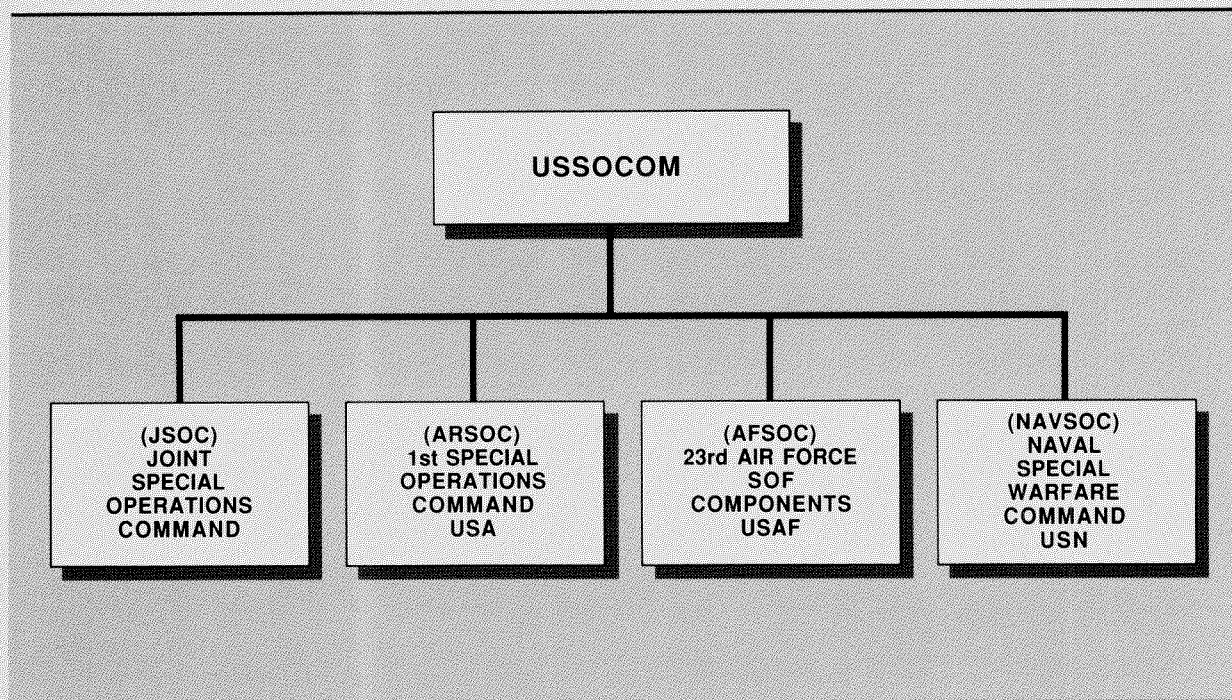
Since World War II, the fiscal support to SOF has been erratic; it alternated between periods of heavy investment when the force was expanded rapidly in response to immediate national needs, and periods of retrenchment in ensuing years as our perceived needs waned. Since no single management organization existed to represent SOF in policy and budget deliberations, our attempts to maintain a viable SOF capability fell woefully short of the mark, as evidenced by our ill-fated 1980 hostage rescue attempt in Iran. We recognized the dangers to our security associated with this erratic fiscal support and fragmented management of SOF, and, in partnership with the Congress, moved to institutionalize SOF within the Department of Defense. To that end, we have undertaken several major steps over the past year.

First, we have activated the U.S. Special Operations Command (USSOCOM), a unified command headquartered at MacDill Air Force Base, Florida. The major force components of USSOCOM are shown in Chart III.E.3. The 40,000 men and women of USSOCOM -- from both the Active and Reserve Components -- are organized into a wide variety of units. These include the Army's Special Forces, Rangers, Psychological Operations, Civil Affairs, and Special Operations Aviation units; the

Navy's SEAL and SEAL Delivery Vehicle Teams, and the Air Force's 23rd Air Force SOF assets.

Chart III.E.3

Major USSOCOM Elements



USSOCOM's principal function is to prepare its forces to carry out their assigned missions under the operational command of the five geographic theater commanders. In addition, USSOCOM is responsible for developing SOF strategy, doctrine and tactics, as well as training and education. The U.S. Commander in Chief, Special Operations Command (USCINCSOC), also exercises a unique degree of control over the development and acquisition of SOF-peculiar equipment, materiel, supplies, and services. Finally, USSOCOM also is developing the capability to exercise operational command of special operations missions when directed by the President or myself.

Pursuant to congressional direction, we also have established an Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict who supervises, prepares, and justifies SOF programs; exercises policy and resource oversight for both SOF and low-intensity conflict (LIC) activities within the Department of Defense; and represents the department in interagency matters.

Another major development is our creation of Major Force Program (MFP) 11 for SOF within our Five-Year Defense Program (FYDP). MFP 11 consolidates SOF funding previously scattered among ten other programs. It will focus our capability and help ensure that programs, once approved, will be implemented in a timely manner.

In June 1987, President Reagan also took steps to address the broad range of LIC issues and concerns. He established a LIC Board chaired by the National Security Advisor, which incorporates a Senior Interagency Group, an Interagency Group, and a number of working groups to identify key issues and coordinate policy formation. The board constitutes an interagency mechanism to develop broad-based cooperation, support, and understanding of LIC issues. As a member of the board, the Department of Defense is actively involved in the interagency review of issues ranging from security assistance to intelligence and interoperability, as well as the role of defense resources in LIC.

4. The Next Decade: Preserving the Capability

We mentioned earlier that our goal is to sustain the gains already made to preserve a special operations capability commensurate with anticipated future national security requirements. One of the keys to sustaining our effort is ensuring that we continue attracting highly qualified, dedicated people to SOF, and provide them the best possible training and education. We believe that, given the importance of the mission, career enhancements such as the creation of a Special Forces branch within the Army, and increased opportunities for career advancement with the creation of USSOCOM are powerful incentives for attracting and retaining the kind of people we need.

We also must continue a balanced, well-reasoned modernization of the force to ensure that it maintains the ability to execute its missions in the face of increasingly sophisticated adversaries. The CV-22 tilt-rotor aircraft, which will enter service with SOF in the mid-1990s, will improve greatly our capacity for infiltration, exfiltration, and resupply of deployed forces in target areas beyond the capability of current aircraft. It also provides an effective exfiltration counterpart to the MC-130's deep-infiltration capability. Similarly, introduction of the Special Warfare Craft, Medium (SWCM), the Advanced SEAL Delivery System (ASDS), and continued deployment of Dry Deck Shelters (DDS) and DDS-capable submarines will broaden our sea-based infiltration and exfiltration capability.

5. Conclusion

SOF revitalization is essential to our national security. Reorganization and institutionalization of this vital capability provide a sound footing for the future. In partnership with the Congress, we are restoring our SOF capability. As we complete the process of integrating SOF into our overall defense structure, we look forward to continuing our partnership with the Congress in sustaining our SOF capability in the 1990s.

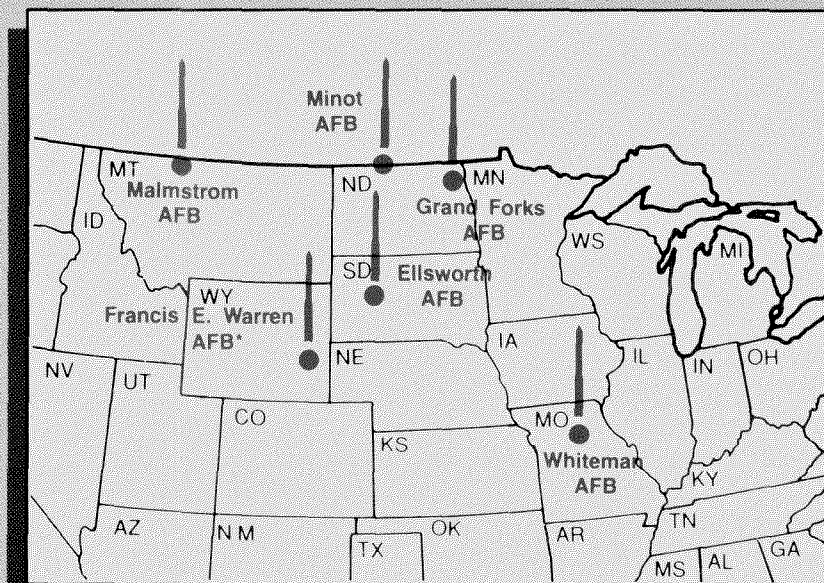
F. NUCLEAR FORCES

1. Introduction

Our nuclear forces constitute our best deterrent against nuclear aggression. The strategic modernization program directed by the President in 1981 has enhanced this deterrent by improving our forces' accuracy, reliability, and survivability. Our FY 1989 budget continues these improvements, while carrying forward our pursuit of low-observable technologies, mobility, and improved accuracy to offset Soviet advantages and exploit Soviet weaknesses. Additionally, our Strategic Defense Initiative (SDI) is developing technologies that have the potential to provide highly effective defenses against ballistic missiles, while a parallel program is examining advanced air defense concepts.

Chart III.F.1

Locations of USAF ICBM Bases



* All bases are Minuteman except F. E. Warren which Has Minuteman & Peacekeeper

2. Strategic Offensive Forces

a. Intercontinental Ballistic Missile (ICBM) Forces

Our land-based ICBM forces are based as shown in Chart III.F.1. Our primary near-term objective in modernizing these forces is to counter Soviet advantages in hard target capability by deploying more accurate missiles with an increased capability to hold very hard Soviet targets at risk. To this end, we are completing deployment of 50 Peacekeeper missiles in refurbished Minuteman silos at F.E. Warren Air Force Base in Wyoming.

Though these missiles' assumption of day-to-day operational alert status was slowed slightly by late deliveries of guidance systems, over 20 of the 33 missiles already in silos were on alert at the end of January. We will install the 17 remaining missiles in silos by the end of this year. The congressional reduction in our planned FY 1988 purchase from 21 missiles to 12 was the fifth consecutive reduction in the program's history. Given congressional unwillingness to approve more than 12 missiles per year, we reluctantly request procurement funds for 12 Peacekeepers in FY 1989 instead of the 21 missiles previously planned.

Our longer-term objective is to deploy Peacekeepers in a basing mode that is more survivable. To do this, we are developing rail-garrison basing for the Peacekeeper force. Trains carrying two missiles each could be garrisoned at Air Force bases in peacetime, from which they could be dispersed over the existing rail network in times of national need to increase the missiles' survivability. Our long-term goal is to deploy 100 Peacekeepers in the rail-garrison mode, including the 50 missiles initially deployed in silos. The development funds requested for FY 1989 support an initial rail-garrison deployment in late 1991. Of the 12 missiles requested in FY 1989, we plan to use eight for deployment in the rail garrison system, and the remaining four for tests. If Peacekeeper procurement continues at a rate of only 12 missiles per year, however, it could take until beyond the turn of the century to deploy the entire 100-missile Peacekeeper force in rail-garrison basing.

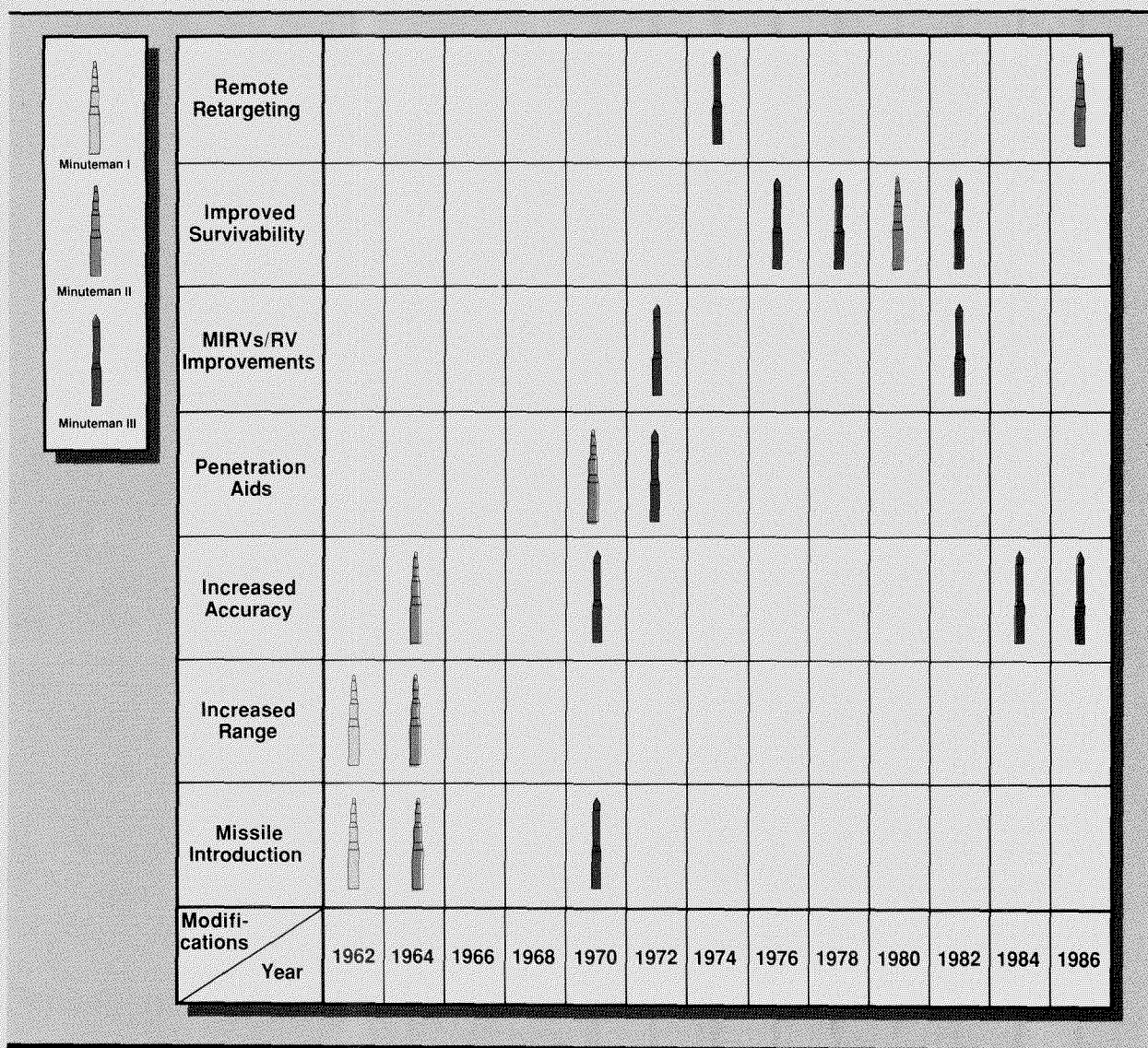
We recommend terminating the Small ICBM program that was planned in the FY 1988-89 budget request, principally because the program will not be cost-effective. The cost per deployed warhead, including the missile and hardened mobile launcher that each requires, is well above that of other new survivable strategic systems. Once deployed, this system would require substantial funding for operations, and would demand about 8,500 Air Force and civilian workers to operate. Clearly, we cannot afford the additional \$40 billion required to complete the system,

given the severely constrained funding levels we now face. Peacekeeper in a rail-garrison mode fully meets the requirement for a survivable and stabilizing land-based system.

However, in deference to preserving the strategic consensus that has supported our arms-control negotiations, and out of respect for alternative congressional views regarding the merits of the Small ICBM, we plan to continue a development program to provide a basis for the next administration to continue the Small ICBM if it decides to do so. We will therefore use the \$700

Chart III.F.2

Highlights of Minuteman Modernization Efforts



million appropriated by the Congress for the program in FY 1988 and the \$200 million requested in FY 1989 to support continued development of the Small ICBM and basing through FY 1989.

The Minuteman force has served as the backbone of our land-based ICBM deterrent since its initial deployment in 1962. Since that time, the Minuteman has been regularly modernized to maintain and enhance its deterrent capability, as shown in Chart III.F.2. We are continuing to refurbish or replace aging Minuteman components to maintain the system's capability and reliability.

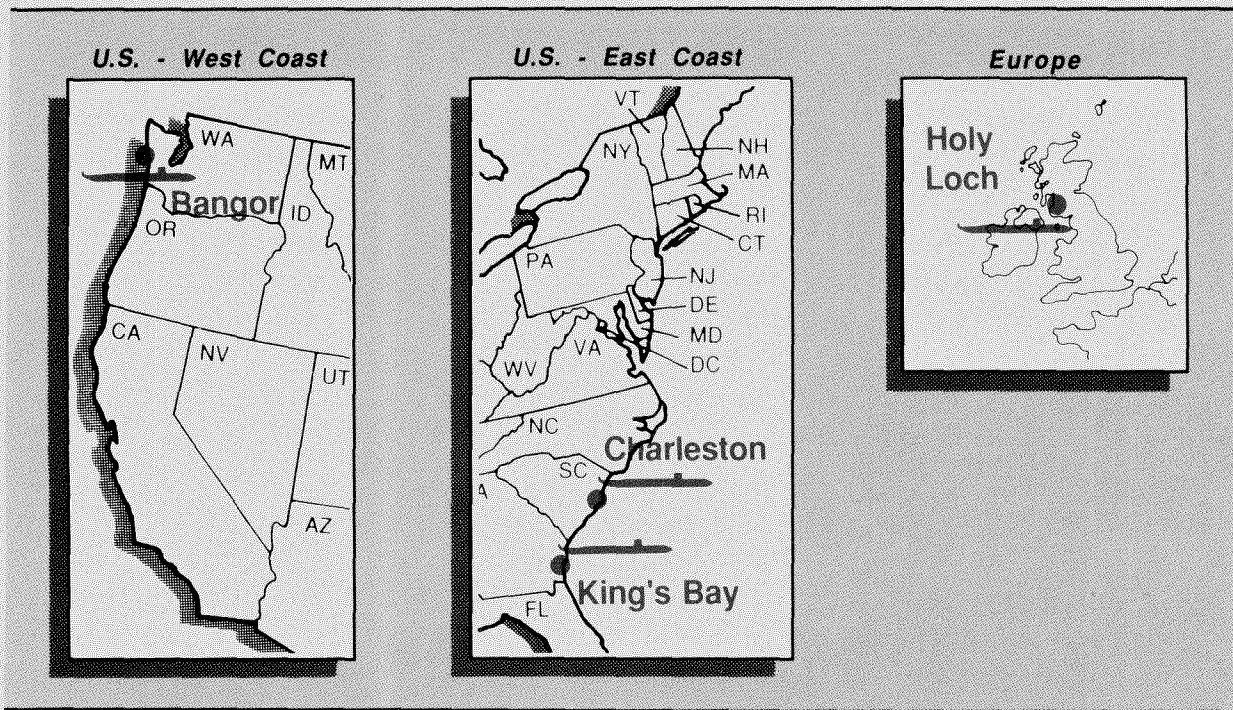
	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
Peacekeeper			
Missiles and			
Silo Basing			
Development:			
\$ Millions	290.0	36.0	40.0
Construction:			
\$ Millions	25.9	5.6	--
Procurement:			
Quantity	12	12	12
\$ Millions	1,136.6	873.7	808.7
Peacekeeper Rail-			
Garrison Basing			
Development:			
\$ Millions	90.0	350.0	792.9
Construction:			
\$ Millions	--	3.5	44.4
Small ICBM and			
Mobile Launcher			
Development:			
\$ Millions	763.5	682.3	200.0
Minuteman			
Modernization			
Development:			
\$ Millions	52.4	84.3	61.1
Procurement:			
\$ Millions	109.9	80.0	73.2

b. Sea-Based Strategic Nuclear Forces

Our fleet of 28 Poseidon and eight Trident ballistic missile submarines (SSBNs) are based as shown in Chart III.F.3. They provide us with our most survivable strategic nuclear capability.

Chart III.F.3

Locations of Sea-Launched Ballistic Missile Submarine Bases



We plan to continue procuring one Trident SSBN per year, and to deploy the Trident II (D-5) missile beginning with the ninth Trident SSBN in late 1989. The first Trident SSBNs equipped with D-5 missiles will be based at the new ballistic missile submarine base at Kings Bay, Georgia. All subsequent Trident SSBNs will deploy carrying the D-5 missile, and we plan to modify the first eight Trident SSBNs to carry the D-5 when the submarines undergo their first overhaul. As our older Poseidon SSBNs reach the end of their service lives in the mid- to late 1990s, they will be retired. Consequently, by the end of this century, our SSBN force will be composed entirely of quieter, more capable Trident SSBNs armed with D-5 missiles, which are more accurate and can carry larger payloads than earlier sea-launched ballistic missiles.

Completion and outfitting of the ninth Trident SSBN, the USS Tennessee, is on track, with sea trials scheduled to begin this September. The USS Tennessee will be our first SSBN armed with the D-5 missile. Flight tests of the D-5 began on schedule in January 1987 and, overall, have been very successful. As a result, the current estimates for D-5 range, accuracy, and reliability are well within the established system requirements.

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
Trident			
Submarines			
Development:			
\$ Millions	33.7	30.9	33.5
Construction:			
\$ Millions	131.1	73.8	34.5
Procurement:			
Quantity	1	1	1
\$ Millions	1,357.1	1,260.8	1,368.1
Trident II Missiles			
Development:			
\$ Millions	1,573.3	1,050.5	580.9
Procurement:			
Quantity	21	66	66
\$ Millions	1,346.7	2,047.0	1,873.5

Our FY 1989 budget supports procurement of the sixteenth Trident SSBN, continued development of the D-5, and production of 66 D-5 missiles. While the missile is still projected to become operational in late 1989, the current development funding is austere. Consistent with the largely successful performance thus far, the budget provides only limited flexibility to correct any deficiencies that might be identified in subsequent tests.

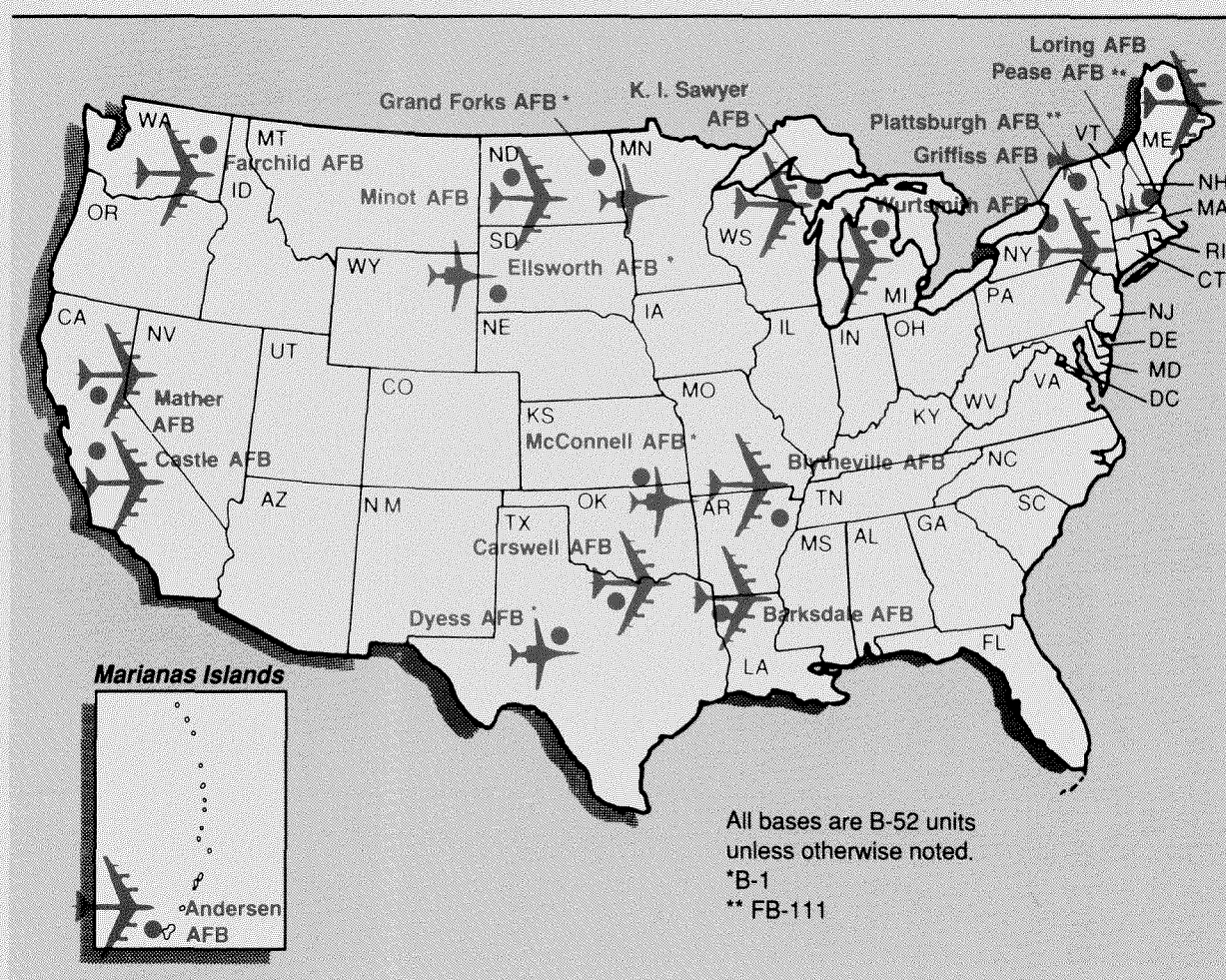
c. Strategic Bomber Forces

Our objectives in modernizing the strategic bomber force, based as shown in Chart III.F.4, are to maintain a capability to penetrate Soviet airspace with high confidence and to deliver weapons more accurately. To do this, we are installing air-launched cruise missiles (ALCMs) on B-52s; completing deployment of the B-1B bomber; developing the Advanced Technology Bomber (ATB), the B-2; and pursuing an Advanced Cruise Missile (ACM) program.

We have already equipped 98 B-52Gs and about 60 B-52Hs with the ALCM-B, and plan to outfit all 96 B-52Hs with the missile by early 1990. ALCMs, because of their relatively small radar cross sections and the low altitudes at which they fly, present difficult targets for enemy air defenses. They have prolonged the useful life of B-52s by allowing these older bombers to hold targets at risk without penetrating Soviet defenses. For the future, we are continuing work on the ACM, which will have a

Chart III.F.4

Locations of U.S. Bomber Bases



longer range than the existing ALCM-B. The extra range will allow bombers to stand off farther from enemy air defenses, and the missiles themselves to circumnavigate some defenses. Increased use of low-observable technology will enhance the new missile's ability to penetrate highly defended areas. The ACM is scheduled to become operational before the end of the decade, and will be deployed initially on B-52Hs at K.I. Sawyer Air Force Base in Michigan.

We now have five squadrons of B-1Bs -- two each at Dyess Air Force Base, Texas, and Ellsworth Air Force Base, South Dakota, and one at Grand Forks Air Force Base, North Dakota. The final squadron, being assembled at McConnell Air Force Base, Kansas, will be operational by June 1988.

To counter projected future improvements in Soviet air defenses, we are developing the B-2, whose design is based on advanced low-observable technologies. The first of 132 B-2s will be deployed at Whiteman Air Force Base, Missouri, in the early 1990s.

To improve the effectiveness of our penetrating bombers, we are also requesting FY 1989 funds to continue developing an improved short-range attack missile -- the SRAM II -- to replace the aging SRAM A. SRAM II will have greater range, penetration capability, and lethality than its predecessor.

The additional funds approved for KC-135 reengining in FY 1988 will allow us to convert up to 14 more aircraft this year than we

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
B-52 Bomber Modifications Development: \$ Millions	--	--	--
Procurement: \$ Millions	390.7	240.0	215.9
B-1 Bomber Modifications Development: \$ Millions	115.7	366.8	221.6
Procurement: \$ Millions	88.0	14.5	26.5

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
SRAM II Development: \$ Millions	65.5	174.3	231.5
KC-135 Modification Development: Procurement: \$ Millions	0.4 763.5	4.0 705.1	3.2 593.8
Air-Launched Cruise Missile Procurement: \$ Millions	9.4	2.3	--

had earlier anticipated. We have already outfitted over 100 KC-135s with new engines, and our FY 1989 request supports 36 more conversions.

3. Strategic Defensive Forces

a. Strategic Defense Initiative

Despite budget cuts, the Strategic Defense Initiative (SDI) program is making satisfactory progress toward its goal of supporting an informed decision in the early 1990s on deploying a ballistic missile defense. Chapter IV.A. discusses our SDI program in detail.

b. Air Defense

Our near-term goal in modernizing our air defense forces is to correct deficiencies in their ability to detect and intercept current Soviet bombers and cruise missiles. For the longer term, we seek to develop the technologies needed to defend against the more advanced Soviet cruise missile and bomber threat projected for the 1990s.

We will achieve our near-term modernization goal in the early 1990s. Air National Guard F-106 and F-4 interceptors will have been replaced by F-15s and modified F-16s, and two new surveillance systems will be operational: the North Warning System of radars across northern Canada, and the Over-the-Horizon-

Backscatter (OTH-B) radar system, covering very large ocean areas to the east, west, and south.

The east coast site of the OTH-B radar system is now in place. Tests in early 1988 against cruise missile-sized objects will assess the radar's ability to provide warning against attack by cruise missiles, which are the most difficult objects to detect and track. We are requesting funds in FY 1989 to procure the first of two Alaskan OTH-B sectors.

Our longer-term goal -- defending against advanced low-observable Soviet cruise missiles and bombers -- cannot be achieved by marginally upgrading current systems, but will require significant gains in surveillance technologies, long-range intercept missiles, antisubmarine warfare systems, and battle management systems. Our Air Defense Initiative (ADI) is conducting research on these technologies on a schedule that will permit a decision on full-scale development of an advanced air defense to be made concurrently with decisions on ballistic missile defenses.

Any further reductions in the ballistic missile threat, whether through arms control agreements or defenses, will increase the relative importance of the bomber and cruise missile threat. A comprehensive ADI effort could provide the Soviets with a powerful incentive to forgo investment in an advanced bomber and cruise missile offense in the 1990s, knowing that we would be technologically prepared to negate any such investment with an effective defense.

c. Space Control

The Soviets have already deployed an antisatellite (ASAT) system. The United States needs an operational ASAT to deter the

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
Strategic Defense Initiative Development: \$ Millions	3,279.7	3,551.0	4,545.9
Air Defense Initiative Development: \$ Millions	35.6	49.2	213.6

	FY 1987 Actual Funding	FY 1988 Planned Funding	FY 1989 Proposed Funding
Space Control Development: \$ Millions	208.3	203.6	74.5

Soviet Union from exploiting its present ASAT monopoly. Unfortunately, the continuing congressional prohibition against testing the air-launched miniature vehicle (ALMV) against targets in space has forced us to cancel the ALMV ASAT program. We believe this to be an extremely unwise decision, but we cannot use scarce resources on a program we are unable to test. Should the Congress decide to allow us to deter the Soviet ASAT capability, we would be prepared to reprogram the necessary resources.

4. Strategic Command, Control, and Communications

Our strategic command, control, and communications (C³) modernization program has corrected many serious deficiencies in warning sensors, command centers, and communications links. Some of these improvements are already in place. Recent examples are the upgraded Ballistic Missile Early Warning System (BMEWS) radar in Greenland and the PAVE PAWS SLBM warning radars in Georgia and Texas.

We are also making progress with our communications programs. The Ground Wave Emergency Network (GWEN) will become operational this year with connectivity provided by an initial 56 nodes (relay towers); an additional 40 nodes will complete the system. Although the total number of nodes is about 30 less than previously planned, the 96-node system will meet our most essential requirements. In FY 1989, we will also begin developing a GWEN receiver for ICBM launch control centers. The equipment will be based on the miniature receive terminals (MRTs) used by bombers.

The extremely low frequency (ELF) submarine communication system will become fully operational in FY 1991, when receivers have been installed on the entire SSBN force. The transmitter site in Michigan (one of two in the network) will come on line in FY 1990, slightly later than previously planned.

In acting on our FY 1988 request, the Congress accelerated the Milstar satellite program, and we are requesting funds in FY 1989 to continue the program on its revised schedule.

5. Nonstrategic Nuclear Forces

Our programs continue to support NATO's 1983 Montebello decision to reduce the number of nuclear weapons in Europe by 1,400, while improving the survivability, effectiveness, safety, and security of the remaining warheads and delivery systems.

a. Intermediate-Range Nuclear Forces

NATO's perseverance in deploying 108 Pershing II ballistic missiles (completed in 1985), and 304 of the planned 464 ground-launched cruise missiles (GLCMs), has led to the first major arms reduction agreement between the United States and the Soviet Union. All U.S. Pershing IAs, IIs, and GLCMs, as well as the entire force of Soviet SS-4s, SS-5s, SS-12s, SS-20s, SS-23s, and GLCMs, will be scrapped, resulting in the elimination of deployed missiles capable of carrying over 400 U.S. and over 1,400 Soviet INF warheads.

The treaty is militarily advantageous to us, but will require some force adjustments to maintain a full set of flexible response options. The actions will be fully consistent with the letter and spirit of the treaty. Some of these adjustments represent long-standing requirements stemming from the 1983 Montebello decision.

b. Short-Range Nuclear Forces

The replacement of our aging artillery-fired atomic projectiles (AFAPs) is continuing. The new rounds possess greater range and accuracy, and also incorporate improved safety and security features. The complete replacement of these older systems is, however, constrained by a congressionally imposed ceiling of 925 modern AFAPs. We request the removal of that ceiling to continue with vitally needed modernization programs agreed to at the highest levels at Montebello in 1983.

We are initiating development of a new short-range nuclear missile to replace the aging Lance system, with the mid-1990s as an initial deployment goal. The new missile -- Follow-on to Lance (FOTL) -- offers improvements in range, safety, survivability, and reliability relative to its predecessor. One promising contender for FOTL -- the Army's Tactical Missile System (ATACMS)

-- is currently restricted to a conventional role by the Congress. ATACMS missiles are designed to be launched from Multiple-Launch Rocket System (MLRS) launchers; basing FOTL on the ATACMS and MLRS concepts would shorten the system's development time, and thus reduce overall program costs. We request the removal of the congressional restriction on this program as well, in order to be able to implement the Montebello decision.

c. Aircraft Systems

We are continuing to upgrade our dual-capable aircraft and modernize their nuclear gravity bombs. At the same time, we are enhancing the survivability of the aircraft and their nuclear weapons by introducing underground weapon storage vaults and hardened aircraft shelters, by taking extensive measures for defending against chemical weapons, and by enhancing our capabilities to repair runways damaged by conventional weapons.

We are also considering a Tactical Air-to-Surface Missile (TASM) that would effectively extend the combat range of U.S. and allied aircraft, and allow them to attack high-value targets without being exposed to terminal air defenses. We will decide during the formulation of the FY 1990-91 President's Budget whether to pursue a TASM program.

d. Sea-Based Systems

We are continuing production and deployment of the nuclear version of the Tomahawk sea-launched cruise missile, and expect the full force of over 700 missiles to be deployed by the mid-1990s. This system contributes to our nuclear deterrent forces, as well as being part of our nuclear reserve force.

6. Conclusion

The strategic modernization program, the Strategic Defense Initiative, and related nuclear force modernization programs have invigorated both our capability to deter nuclear aggression and the Soviets' interest in achieving arms reduction agreements. We believe the new INF agreement has furthered the security interests of the United States and our European allies. While we believe the President's proposed START agreement will also be in our best interests, we need to continue modernizing our strategic and nonstrategic forces, both to make such an agreement possible and to maintain a credible deterrent at any force level.

G. COMMAND, CONTROL, COMMUNICATIONS, AND INTELLIGENCE

1. Introduction

To deter aggression, we must maintain strong military forces and employ them effectively. Command, Control, Communications, and Intelligence (C³I) systems are the critical information links and control systems necessary to support military decisionmaking and to manage U.S. forces effectively.

2. Command, Control, and Communications

Chart III.G.1

Major Command, Control, and Communications Systems

In Production	Under Development
<ul style="list-style-type: none">• E-6A TACAMO aircraft• Over-the-Horizon Backscatter radars• REGENCY NET communications equipment• Defense Satellite Communications System III• Mobile Subscriber Equipment• Navstar Global Positioning System• Single Channel Ground and Airborne Radio System• Maneuver Control System terminals and processors• Modular Control Equipment• UHF HAVE QUICK anti-jam radios• Position Location Reporting System• Defense Data Network equipment• Defense Switched Network equipment• Secure Telephone Units - III	<ul style="list-style-type: none">• Milstar satellites and terminals• North Warning System short range radars• Compact Very Low Frequency receivers• Miniature Receive Terminals for aircraft• Joint Tactical Information Distribution System• Mark XV combat identification system• Forward Area Air Defense C²I system• NORAD ADP modernization• WWMCCS Information System• Ground Wave Emergency Network

Many of our Command, Control, and Communications (C³) initiatives were highlighted and discussed in last year's Annual Report to the Congress. This year, vital C³ research and development (R&D) activities are continuing to make progress,

while improvements in key C³ systems are being realized, as shown in Chart III.G.1.

a. Strategic Command, Control, and Communications

Strategic command, control, and communications (C³) include: the systems that warn us of and assess a nuclear attack; command centers; and the communications systems required to assure connectivity between sensor sites, command locations, and nuclear capable forces.

Our ability to detect and assess a ballistic missile attack has improved with our recent deployment of a new PAVE PAWS phased array radar and with upgrades to our Ballistic Missile Early Warning System (BMEWS). Over the next few years, our ability to detect bomber and cruise missile attacks will also improve as we continue replacing the old Distant Early Warning (DEW) line with a modern, more operationally cost-effective North Warning System (NWS). With these improvements, and with the future deployment of long-range Over-the-Horizon Backscatter (OTH-B) radars, we will possess a vastly improved attack warning and assessment capability.

The Ground Wave Emergency Network (GWEN) is our primary program for improving, in the near term and at relatively low cost, strategic connectivity. GWEN is unique in that it is our only terrestrial C³ system linking the National Command Authorities (NCA) to our strategic forces and warning sensors which is resistant to electromagnetic pulse (EMP) effects. By assuring that our strategic communications could not be disrupted by EMP, GWEN strengthens deterrence and thus reduces even further the risk of war.

Satellite systems, however, remain the principal long-range response to our strategic communications requirements. Of all the strategic C³I systems, the Milstar satellite and associated terminal system is the most critical. It will provide global two-way communications to the strategic and tactical forces and will be considerably less susceptible to the effects of nuclear detonations and jamming than current systems.

b. Theater and Tactical Command, Control, and Communications

Theater and tactical C³ systems provide military commanders with the facilities and communications equipment necessary for managing conventional forces. The major objective of the theater

and tactical C³ program over the next five years is to ensure that sufficient numbers of new and improved C³ systems are fielded. As the development cycle for several major C³ systems is nearing completion, a substantial investment will be required to acquire and deploy the new equipment successfully. Among the most important of these are the Joint Tactical Information Distribution System (JTIDS), Mark XV combat identification system, Army Command and Control System (ACCS), Army Data Distribution System (ADDS), new TRI-TAC equipment, Single Channel Ground and Airborne Radio System (SINCGARS), the HAVE QUICK anti-jam communication system, and the Navstar Global Positioning System (GPS).

To reduce the time and costs for future acquisitions, programs that rely on nondevelopmental items (NDI) and evolutionary development will be emphasized. The NDI approach reduces costs and is the method we are using in the multibillion dollar Mobile Subscriber Equipment (MSE) communications program. Evolutionary development will also help to reduce costs by avoiding overdesign and by shortening fielding time. Under this approach, equipment with limited capabilities is initially acquired and later upgraded to meet a broader range of needs.

c. Defense-wide Communications and Information Systems

Defense-wide communications and information systems support both nuclear and conventional force management. They possess capabilities required for information processing and display, global and base level communications, and information security.

Our information systems improvements remain targeted on modernizing our Worldwide Military Command and Control System (WWMCCS) Automated Data Processing (ADP) systems, upgrading strategic information systems, and providing across-the-board improvements in the security of defense computer systems. The WWMCCS Information System (WIS), one of the largest of these programs, will replace aging WWMCCS standard ADP systems with modern, worldwide information processing capabilities to support decisionmaking by the National Command Authorities, the Joint Chiefs of Staff, and the Commanders of the Unified and Specified Commands. The WIS will provide critically needed capabilities for operations planning and employment of conventional forces. Deployment of WIS technology is starting and will continue in a phased or block approach into the 1990s. Other major information systems improvements include upgrades to the attack warning and assessment capabilities at our Cheyenne Mountain Complex.

We employ Information Security (INFOSEC) technologies and measures in telecommunications and automated information systems to ensure information vital to our national security is protected.

We have made significant progress in protecting telecommunications by mass producing and fielding low cost secure telephone units (STU-III), by embedding INFOSEC techniques into host information systems with associated space and cost savings, and by developing and evaluating secure computer systems through the National Computer Security Center. Additionally, we are integrating communications security (COMSEC) circuitry into tactical radios and tactical C² systems.

A number of initiatives are under way to restrict access of classified material to those with a need to know. These include: increased security for our cryptographic keying material through the automation of the key generation and distribution process; improved processing of our nuclear command and control messages by automating their processing and distribution; and improved protection of our sensitive U.S. facilities against electronic eavesdropping and penetration through the development of measures to detect and counter these attacks. In summary, our national and DoD security policy is focusing on promoting the most effective distribution of resources to preserve the security of our classified information.

3. Intelligence

Since effective force management depends on integrated C³ and intelligence systems, an equal priority has been placed on modernizing our intelligence capabilities. Consequently, significant gains in developing and procuring improved intelligence equipment have been realized.

a. National and Tactical Intelligence

Our intelligence activities are accounted for in two separate but related programs: the National Foreign Intelligence Program (NFIP), and Tactical Intelligence and Related Activities (TIARA). Under Presidential direction, the Director of Central Intelligence guides and manages the overall NFIP with our assistance. TIARA programs are developed and managed by DoD in response to commanders' intelligence requirements. TIARA responds to operational commanders' tasking for time-sensitive intelligence, or to national tasking of those systems whose primary mission is supporting the operating forces. Furthermore, it trains personnel for intelligence duties, provides an intelligence reserve, and funds the research and development of new capabilities. Examples of major TIARA initiatives include: the Defense Mapping Agency's Exploitation Modernization Program; the Navy's Integrated Undersea Surveillance System (IUSS), the Battle Group Passive Horizon Extension System (BGPHEs) and Relocatable Over-the-Horizon-Radar (ROTHR); the Marine Corps' Tactical Remote Sensor

System (TRSS); the Air Force's Rivet Joint aircraft; the Army's All Source Analysis System (ASAS) and the Air Force's Enemy Situation Correlation Element (ENSCE) under the Joint Tactical Fusion Program; and the Joint Surveillance/Target Attack Radar System (Joint STARS).

b. Intelligence Oversight

Responsibility for the independent monitoring, review, and inspection of DoD intelligence and counterintelligence activities to ensure their propriety and legality is assigned to the Assistant to the Secretary of Defense (Intelligence Oversight) (ATSD(IO)). The ATSD(IO) conducts worldwide inspections of DoD intelligence elements, and oversees the inspections of intelligence units conducted by the Inspectors General (IG) of the military departments and defense agencies. The ATSD(IO), when appropriate, conducts inquiries and also oversees investigations by the IGs and investigative agencies into allegations of questionable intelligence activities to assure that the investigations undertaken are rigorously and thoroughly accomplished, and that corrective measures are taken. The ATSD(IO) reports directly to the Secretary of Defense, and as the DoD point of contact with the President's Intelligence Oversight Board (PIOB), prepares a quarterly DoD intelligence oversight report to the board.

4. Conclusion

FY 1989 represents a landmark year in fulfilling our commitment to modernize our C³I capabilities. After years of planning, designing, developing, and now fielding, our C³I program is entering its final and most critical stages. Congress's continued support of this effort is essential if we are to complete the rebuilding of our C³I systems.

H. THE NATO DEFENSE PROGRAM

The signing of an intermediate-range nuclear forces (INF) agreement in December 1987 highlights the importance of continuing our efforts to modernize and strengthen NATO's nuclear and conventional forces. The United States is contributing to that effort through strengthening its nuclear and general purpose forces and participating in NATO-related force development programs. We are supporting the 1983 Montebello Decision to modernize theater nuclear forces, and the 1984 Conventional Defense Improvements program that addresses identified NATO critical deficiencies. Taken collectively, the U.S. defense programs for NATO reflect our continuing strong commitment to the maintenance of an effective deterrent in the post-INF environment.

In 1983 NATO defense ministers agreed at Montebello to modernize theater nuclear forces. Major programs stemming from the Montebello Decision that have a direct bearing on the United States include:

- Modernization of NATO's dual-capable aircraft and their nuclear bombs;
- Development of a tactical air-to-surface missile to replace a portion of the nuclear bombs delivered by U.S. and allied aircraft;
- Development of a follow-on system to replace the aging Lance missile employed with U.S. and allied forces; and
- Production of efficient modern nuclear artillery rounds.

Most of these systems are included in our FY 1989 Amended Budget, as detailed in Chapters III. C. and F. All will be given high priority as we review our defense plans and consult with our NATO allies. As noted in Chapter III.F., we are proposing that the Congress lift the current limitations on nuclear artillery rounds.

Another important part of our NATO Defense Program is Conventional Defense Improvements. In addition to our forward-deployed forces in Europe, the majority of the land, sea, and air forces in CONUS are available to reinforce Europe rapidly and satisfy our NATO commitments. We must continue to modernize these forces with new equipment to retain our technological edge on the

battlefield. The M1A1 tank, F-15 fighter, and Aegis cruiser are examples of current procurement programs which contribute to our general purpose forces, while concurrently forming part of our NATO commitment. Details on numerous ground, tactical air, and naval programs that contribute to our NATO capabilities are also covered in preceding chapters of Part III.

As we continue to modernize our current forces, we must look ahead with research and development programs to enhance further our capability to execute a flexible conventional response. We are developing tactical reconnaissance RPVs and highly accurate conventional cruise missiles capable of being launched from air, sea, and land platforms to locate and strike critical targets deep in Warsaw Pact territory. We will exploit conventional variants of nuclear weapons, such as Tomahawk and Lance, to enhance our deep-strike capabilities while reducing the threat of nuclear escalation. Additionally, in FY 1989 we plan to begin production of Tacit Rainbow, a defense suppression cruise missile. It is our intention to procure Tacit Rainbow in large numbers, in both air- and ground-launch versions, to increase greatly our effectiveness against enemy air defenses.

As part of the NATO Conventional Defense Improvement Program, NATO military commanders have identified nine specific areas of critical deficiency requiring special emphasis. These deficiencies include: air defense; ground forces; mobilization; reinforcement; sustainability; follow-on forces attack; electronic warfare and command and control; and naval antisubmarine, antiair, and amphibious capabilities. These deficiencies are being addressed in specially highlighted force goals assigned to each NATO member. The United States has endeavored to set the example for other nations by fully implementing the highlighted force goals assigned to us. To meet these goals we must support programs such as POMCUS, airlift, and sealift to enable us to achieve our goal of ten divisions in Europe ten days after mobilization (M plus 10). We must continue to develop and procure modern munitions such as AMRAAM, Phoenix, and third-generation antitank weapons. Our ability to attack second-echelon Warsaw Pact forces must be developed further utilizing systems like MLRS, ATACMS, JSTARS, and new standoff air-to-ground missiles. In the area of advanced cruise missile guidance, we are exploring several innovative technologies that we hope to incorporate in currently produced weapons as soon as feasible. We need to remove the restrictions on further development of ATACMS as a follow-on to Lance. To control our air space and protect our aircraft we are continuing to improve, develop, and field modern air defense systems such as FAAD and Patriot. Our contributions to NATO Infrastructure are providing hardened aircraft shelters and essential facilities at co-located operating bases in Europe. In addition, we are working with our NATO allies to develop a common system for aircraft identification. We will continue to devote

special attention to our highlighted force goals to ensure the maintenance of a strong conventional defense capability in Europe.

Part IV

Items of Special Importance

A. THE STRATEGIC DEFENSE INITIATIVE

1. Introduction

The most significant threat to the safety and security of the United States and our allies is the Soviet nuclear ballistic missile force, which is increasing in both warhead numbers and accuracy. In responding to this growing threat, President Reagan announced the Strategic Defense Initiative (SDI) in 1983. SDI's purpose is to determine the feasibility of a strategic defense system capable of eliminating the threat posed by strategic nuclear missiles to the United States and our allies.

2. Progress

Since the SDI's inception, a series of technology developments and experiments have underscored the potential for using advanced technology to construct an effective strategic defense. In recent months, we successfully demonstrated our ability to intercept targets within the atmosphere and in space. We also made significant advances in several directed energy and sensor technologies, and in system architecture and operating concepts. Based on this impressive progress, in mid-September the Defense Acquisition Board (DAB) recommended that certain SDI technologies enter the demonstration and validation phase of the defense acquisition process. Several other promising SDI technologies are continuing in the concept definition phase.

The purpose of the demonstration and validation phase is to evaluate -- through analysis, experimentation, and simulation -- the feasibility of critical elements of a potential Strategic Defense System (SDS). In addition, all test and evaluation activities planned for the demonstration and validation phase are consistent with U.S. treaty obligations.

a. Phased Deployment

Each defensive tier of an SDS (boost, post-boost, mid-course, and terminal) will consist of sensors, weapons, and battle management assets structured to engage and destroy offensive ballistic missiles and reentry vehicles in one or more phases of their trajectory.

The phased deployment of an SDS is the most reasonable means of achieving the level of defense contemplated by the President's

1983 directive. Using this approach, an SDS would be deployed incrementally, with each phase contributing significantly to deterring a Soviet nuclear attack on the United States and our allies.

The phased deployment approach considers four key factors: time, technology, defensive missions, and responsive threats. It recognizes that some efforts and technologies will mature faster than others. It accepts the fact that the deployment of a defense, regardless of the first deployment date of its elements, must take place over time. This approach anticipates that, as other technologies mature and are deployed, they will improve the capabilities of existing systems. They will also provide additional capability to perform new and more demanding missions, including overcoming potential Soviet attempts to evade, deceive, or defeat our defensive systems.

b. Phase I

Deploying the initial phase of an SDS will significantly reduce the confidence of Soviet planners that a ballistic missile attack on the United States and its allies would succeed. The SDS will do so by attacking ballistic missiles and their warheads in flight. The SDS elements proposed for Phase I would be deployed in two tiers, boost/post-boost and late mid-course.

We anticipate the six elements listed below and shown in Chart IV.A.1 will form the Phase I SDS:

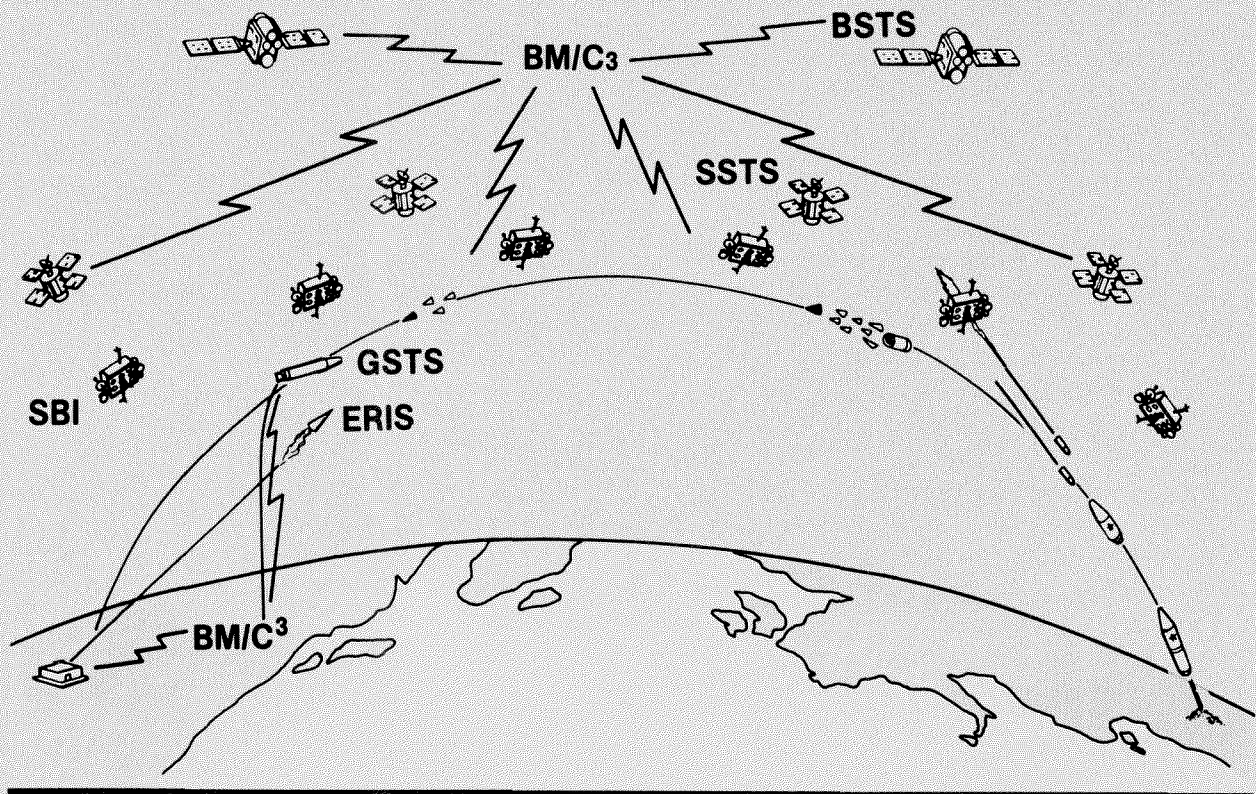
Battle Management / Command, Control, and Communications (BM/C³) -- This element will monitor and control the activities of the elements of an SDS. Information from all elements will be relayed to the battle managers and processed; target assignments will then be communicated to space- and ground-based weapons. This complex communications system must assess the characteristics of a ballistic missile attack rapidly and provide timely, reliable information to the SDS' commander, who will direct the battle, and the command structure. Once a defense response has been determined, the BM/C³ system must execute the response, assess its effectiveness, and revise its response if necessary. The BM/C³ must be able to withstand enemy jamming and the effects of nuclear radiation.

Boost Surveillance and Tracking Systems (BSTS) -- BSTS will detect and track attacking ICBMs and SLBMs during their boost -- or powered -- phase of flight. Once the BSTS senses a launch and tracks the attacking missiles, the information will be relayed to the BM/C³ system and other SDS elements. If an attacking MIRVed missile can

be destroyed early in its boost phase, the shortest phase of its flight, the number of warheads -- called reentry vehicles (RVs) -- destroyed per hit will be greatly increased, since the RVs and decoys are not released until the next flight phase, termed the post-boost phase.

Chart IV.A.1

Phase I Strategic Defense System



Space-Based Interceptor (SBI) System -- SBIs will consist of a number of space platforms housing multiple rocket-propelled interceptors. Upon receiving the appropriate command, these nonnuclear interceptors will seek out and destroy the attacking missile's boosters during the boost and post-boost phases, and also the RVs in the mid-course phase of their flight. These nonnuclear interceptors will destroy their targets by direct collision (hit-to-kill) at extremely high speeds.

Space-Based Surveillance and Tracking System (SSTS) -- SSTS will detect and track RV-dispensing post-boost vehicles and the RVs themselves in the post-boost and mid-course phases of flight. The system will use a series of satellites to acquire and track the

object and discriminate between reentry vehicles, decoys, and space debris. This tracking and discrimination information will be relayed to the BM/C³ system and other SDS elements. The BM/C³ system will then assign targets to the SBI or the exoatmospheric reentry-vehicle interceptor subsystem (ERIS) to destroy the incoming warheads.

Ground-Based Surveillance and Tracking System (GSTS) -- GSTS, also known as the Probe, has three basic functions: search/acquisition; track; and discrimination. Launched into space upon warning of Soviet ICBM launch, the GSTS would track incoming RVs in the missile's mid-course and early terminal trajectory phases; this information will be used to assign both ground- and space-based interceptors to destroy the RVs. GSTS possesses the capability to discriminate between RVs, penetration aids, and space debris.

The Exoatmospheric Reentry Vehicle Interceptor Subsystem (ERIS) -- ERIS is a ground-launched nonnuclear missile interceptor system that will destroy attacking warheads during the mid-course phase. Space and ground surveillance systems must first discern between warheads, decoys, penetration aids, and debris in space. This information will be relayed to the BM/C³ systems, which will process it and communicate target assignments to interceptors such as the ERIS. The small ERIS vehicle will destroy the attacking warhead by colliding with it at an extremely high speed.

c. Advanced (Follow-on) Concepts

We recognized at the outset that, as effective as it might be against the current or projected near-term Soviet ballistic missile threat, the Phase I system must be augmented progressively by advanced technology systems as they mature. Otherwise, we run the risk of degradation of capability as the Soviets react with certain countermeasures.

There are three types of follow-on possibilities which could be pursued and must be retained in a robust, balanced SDI program:

- Advanced technology upgrades or "Planned Product Improvements" (PPI) of the Phase I elements -- e.g., faster, lighter interceptors, more capable sensors, etc;
- Inclusion of new defense tiers -- for example, a terminal defense based upon the High Endo-atmospheric Defense Interceptor (HEDI) in combination with ground-based radar and airborne optical sensors; and

- Entirely new advanced technology concepts to augment the discrimination and intercept systems -- for example, ground- or space-based particle beams for interactive mid-course discrimination; hyper-velocity electromagnetic guns with high-weight homing interceptors to achieve improved coverage in the boost phase; and even a last-ditch terminal layer capability.

To function effectively, any future SDS must consist of a mix of different, yet complementary weapons and sensor systems deployed in tiers. For example, directed-energy interceptor systems will be complemented by kinetic energy interceptor systems; surveillance and tracking sensors will rely on a variety of sensing techniques -- infrared, ultraviolet, visible, or laser radar. The SDS' complementary mix of sensors and defensive weapon systems of differing types will greatly complicate any Soviet attempt to undermine our strategic defensive forces by developing countermeasures against one, or even several, SDS elements. In this way, our strategic defensive systems will be structured in a manner similar to our nuclear deterrent triad of strategic offensive forces -- ICBMs, SLBMs, and manned bombers. The use of the complementary mix of SDS elements will enhance the SDS' overall effectiveness as both a deterrent and a defensive system.

It is vital that the SDI program continue to maintain an extensive, robust advanced technologies program. In fact, to the degree that such demonstrations of advanced technologies are credible and convincing, they may deter Soviet countermeasures and encourage the Soviets to seek realistic offensive ballistic missile reductions.

3. Conclusion

Should deterrence fail, the United States currently does not have the ability to destroy enemy ballistic missiles after their launch -- not a single one, even if launched by accident. This situation must be changed. We and our allies have the right to defend ourselves from attack. The Strategic Defense Initiative is our best hope to protect our allies and ourselves from the specter of nuclear destruction.

B. MILITARY SPACE OPERATIONS

1. Introduction

Even though the United States has used space for national security purposes for over a generation, the Congress and the American public are now focusing intensely on space activities due to:

- Recent launch vehicle failures, and the concomitant loss of their payloads, which have put tremendous strain on our other space resources;
- Ongoing efforts to determine the feasibility of a strategic defense system, the space-based portion of which would require perhaps hundreds of space platforms, and a very robust launch capability; and
- An aggressive and highly successful Soviet propaganda campaign that accuses the United States of the "militarization of outer space," when in fact the Soviets themselves have long used space predominantly for military purposes, and are pursuing capabilities applicable to space-based weapons.

These events have caused us to review critically our military role in space, establish priorities and goals, and implement plans and programs to achieve these goals. As outlined in the new national space policy approved by the President earlier this year, DoD's primary role in space is to strengthen the deterrent posture of U.S. military forces and enhance their capability to fight and win should deterrence fail. To do this, we must assure our unimpeded access to space for all national security missions, particularly in light of the Soviet threat to our space activities. This chapter highlights those Soviet threats, describes our military space plans and programs in support of national space policy, and discusses our near- and mid-term future requirements.

2. The Soviet Military Space Threat

The Soviet military space program enjoys a high priority in the overall Soviet defense program. Soviet military space doctrine holds that "mastery of space is an important prerequisite for achieving victory in war." We assess that the Soviet's space objectives for supporting this doctrine are: attaining and main-

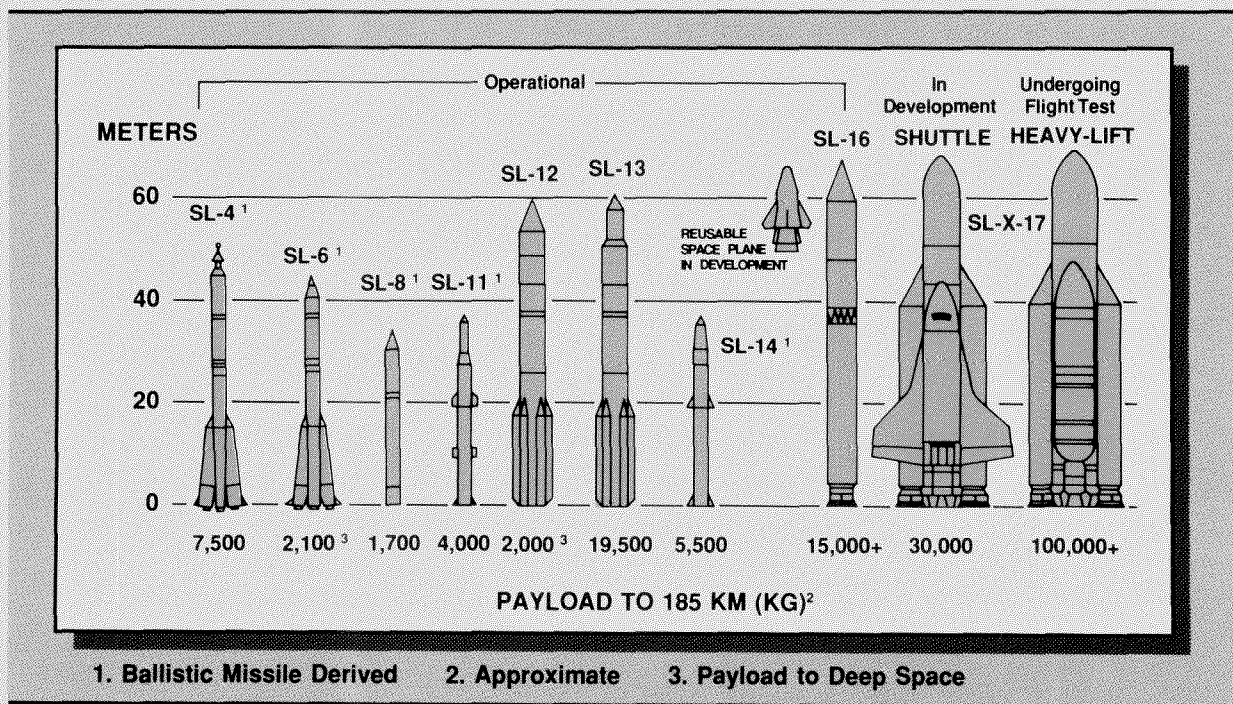
taining military superiority in outer space; denying the use of outer space to other nations; and assuring maximum space-based military support for Soviet offensive and defensive combat operations on land, sea, air, and in space.

Since at least 90 percent of the Soviet Union's space program is devoted to military or military-related purposes, military space programs are allocated resources at a high, stable rate. In fact, we estimate that the Soviet Union has devoted to its space programs an amount of over 60 percent of that expended on their strategic forces.

Over the past three decades the Soviet Union has steadily improved its military space program. Soviet space launch capabilities are impressive. The Soviets maintain and operate over twice as many classes of launch vehicles and have had nearly five times as many launches as the United States over the past seven years. The diverse capabilities and numbers of launch vehicles (see Chart IV.B.1) assures the Soviets access to space to support offensive and defensive terrestrial combat operations. Should

Chart IV.B.1

Soviet Space Launch Vehicles



their entire satellite network -- which supports a wide array of military operations -- be destroyed, the Soviets can reconstitute it completely in two to three months, providing the necessary payloads are available. They are presently developing a heavy-lift launch vehicle they call "Energia," which will boost not only their space shuttles, but also payloads of over 100,000 kilograms (220,000 lbs.). This will, by the turn of the century, allow them to boost into space components to build large space complexes that could be used for military purposes. Moreover, the Soviets man year-round a space station where personnel conduct military experiments, giving them an opportunity to gain vast amounts of space experience that could support military operations.

For over 16 years, the Soviet Union has had a dedicated operational antisatellite weapon effective against satellites in low-earth orbit. Other Soviet systems also have ASAT capabilities. The nuclear-armed GALOSH ABM interceptor deployed around Moscow has an inherent ASAT capability against low-altitude satellites. In fact, a Soviet General Staff officer stated that the Soviet Union had a direct-ascent ASAT capability that had been tested against a point in space. Also, Soviet ground-based, high-energy lasers may be capable of damaging some U.S. satellites, and the Soviets are also technologically capable of conducting electronic combat against U.S. space systems.

For the future, the Soviets are conducting research and development on laser, particle beam, radio frequency, and kinetic energy technologies that could be used for ASAT weapons meeting their doctrinal requirement for space control. We may eventually face an array of both earth- and space-based weapons that, in the absence of a credible U.S. response, will place our space operations at risk. To counter the Soviet threat, we have established space policy goals and programs that ensure our free and unimpeded access to space.

3. U.S. Military Space Programs

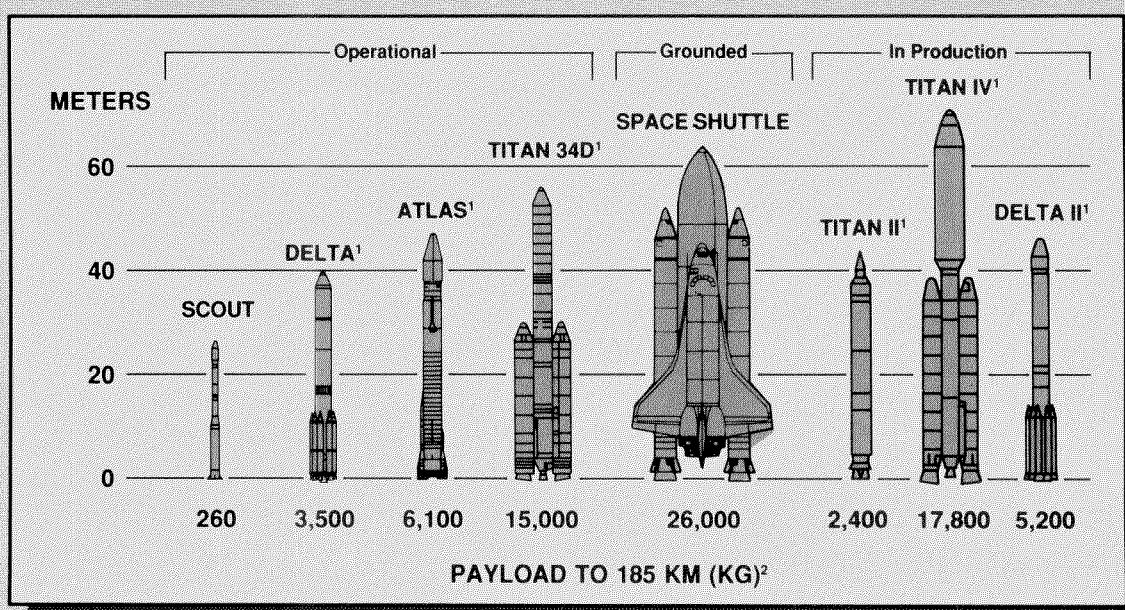
a. Launch Capabilities

One of our most important space policy goals is to provide assured access to space for all national security missions. Achieving this goal requires adequate launch capacity and launch support, with reserve or restoration capability in these areas, plus redundancy in launch systems wherever feasible. As the Congress and the American public are well aware, we cannot presently satisfy all of our launch requirements. The loss of the Challenger shuttle, coupled with the untimely failure of two Titan

34D Expendable Launch Vehicles (ELVs), has created a temporary bottleneck in our ability to execute U.S. space programs. To clear this bottleneck, we will be augmenting the current U.S. space launch vehicle fleet, shown in Chart IV.B.2, by producing new Delta II and Titan IV ELVs. To ensure further that launch capability is available for future DoD operational missions, we are developing a new Medium-Lift Launch Vehicle, the MLV-II. MLV-II will free the space shuttle for more NASA missions and provide DoD with satellite replenishment capability. We are also designing an Advanced Launch System (ALS). The ALS will be capable of heavy-lift (approximately 100,000 to 120,000 pound payload to orbit), and will employ automated systems to reduce launch costs. We are also performing research and development on a National Aerospace Plane. The prognosis for recovery from the current launch capability shortage is good, provided that we make the investment required and sustain it over the long term.

Chart IV.B.2

U.S. Space Launch Vehicles



1. Ballistic Missile Derived

2. Approximate

b. Satellite Systems

Arms control verification and ballistic missile attack warning using space-based assets has become substantially more difficult for two reasons. First, the Soviet Union's two new mobile ICBMs,

the road-mobile SS-25 and the rail-mobile SS-24, are now operational. While we can easily monitor fixed ICBM silos for arms control verification and other purposes, mobile ICBMs pose a more difficult problem. Second, the Soviets have become more adept and more pervasive in their use of camouflage, concealment, and deception to prevent collection of accurate information by satellite systems. With the Congress's support, we can improve our space surveillance systems to meet these challenges. At the same time, a new generation of early warning satellites will provide more accurate and more complete early warning information. Our Milstar communication satellites will ensure survivable command and control of our strategic forces.

Space systems have shown tremendous promise for providing support to the tactical field commander as well. This development is largely attributable to new technology that permits direct transmission of information from satellites to compact, mobile terminals for data processing and display. A ship's captain, an aircrew, or a soldier in the field equipped with such a terminal could have near-real-time access to space systems for gathering and communicating navigation, environmental, and other tactical information. In the heat of battle, this information would aid the commander in seeing above and through the "fog of war," thereby providing great advantages to our combat forces.

Our increasing reliance on space systems, however, raises the possibility of their vulnerability. The greater our reliance on space systems for deterrence and for operational capability, the more attractive a target they become for our adversaries, and the more our capability might be degraded by systems' failures.

c. Required Improvements

To deter attack on our space assets in the face of Soviet advances, and to preserve our ability to operate effectively in space, we must:

- Enhance our ground-based space surveillance network and develop space-based sensors capable of near-real-time monitoring of all potentially threatening objects in space;
- Develop and deploy a comprehensive U.S. ASAT capability;

- Develop, operate, and maintain space systems to support and enhance the effectiveness of land, sea, and air forces throughout the conflict spectrum;
- Continue our improvements to satellite systems survivability through both active and passive measures including hardening, maneuverability, proliferation, on-orbit spares, and other related measures;
- Investigate the requirements and infrastructure required to reconstitute our essential space operations in wartime by rapid launch of replacement or substitute satellites; and
- Continue the ongoing space launch recovery effort, including the development of an Advanced Launch System (ALS), leading to a more flexible, responsive launch capability by the late-1990s that will also significantly reduce launch costs.

4. Industry and Research and Development

To achieve our goals in space, we must strengthen our space-related industrial base, and its associated research and development activities. Our future space program is in the making now: in colleges and universities where our scientists and technicians are trained; and within government, industry, and academia, in laboratories where research is being conducted that will foster new space technologies. The quality of our people and of our research and development program is crucial to the future success of our space programs. Major new endeavors such as the National Aerospace Plane, the Advanced Launch System, and the Strategic Defense Initiative, will put great demands on existing resources. To meet the demands, our space policy calls for a coherent program encouraging technical training within the Armed Services, and sponsoring basic research in industry and in our universities.

5. Conclusion

Our activities in space -- as well as the activities of other nations -- will vitally affect our national security in the years to come. In the three short decades since Sputnik first entered orbit, we have seen and participated in a phenomenal growth in the use of space for national security purposes. During this period, U.S. military space assets have directly contributed to deterrence and stability in our relations with potential adversaries. We

cannot afford to abandon the use of space or cede its control to any other nation, if we are to preserve the common defense.

C. RESEARCH AND DEVELOPMENT

1. Introduction

Our ability to execute our defense strategy depends, in large measure, upon our ability to provide our personnel with technologically superior weapons and materiel. To continue enhancing our deterrent capability, the United States must pursue a strong research and development (R&D) program. The Soviets are continuing to invest heavily in R&D, and are actively challenging our lead in a number of key technologies. Thus, sustained, stable investments in R&D are necessary if we are to maintain technological excellence and provide new means for meeting the Soviet challenge.

This chapter outlines our Science and Technology programs, Defense Advanced Research Projects Agency projects, and Defense Nuclear Agency programs. The critically important role of a comprehensive and realistic test and evaluation (T&E) effort is also discussed.

2. Science and Technology Program

The principal objective of our Science and Technology (S&T) program is to explore new ideas and technologies to provide the sound technical foundation necessary to develop equipment and systems that can deter or, if necessary, defeat our adversaries. This section discusses selected areas within our S&T program.

a. Semiconductors

We continue making progress in semiconductor research and development. Several Very High Speed Integrated Circuits (VHSIC) have been tested in operational environments. The first operational installation of VHSIC occurred in the F-111D Signal Transfer Unit, where a total of 102 integrated circuits were replaced by one VHSIC chip. This increased the reliability of the transfer unit by a factor of 125 while reducing its cost from \$24,000 to \$2,000. Our Microwave/Millimeter Wave Integrated Circuit (MIMIC) program is progressing, and our initial study contracts will be completed in early 1988. We will initiate a Semiconductor Manufacturing Technology program in FY 1988 to address the erosion of our defense industrial base semiconductor manufacturing capability, and to reduce our dependence upon foreign semiconductors. Our objective is to encourage American

industry to develop an indigenous, world-class semiconductor manufacturing capability.

b. Aircraft Propulsion

The Integrated High Performance Turbine Engine Technology (IHPTET) program was initiated as a coordinated industry-DoD-NASA program with the goal of doubling aircraft propulsion system capability by the turn of the century. The program's focus is on higher-risk, higher-payoff approaches than we have previously undertaken in both materials and propulsion technologies, along with innovative gas turbine structural arrangements. IHPTET seeks to maintain the U.S. preeminence in aircraft engine technology.

c. University Research Initiative

Our University Research Initiative (URI) is a vital element of our long-standing commitment to university research, and to scientific and engineering education. The program comprises 80 multidiscipline projects with participation by some 700 graduate students. URI's accomplishments include the controlled modification of turbulent wakes for reducing aircraft drag, higher speed transistors, and improved detection and image recognition at very low light levels. The special capabilities of universities as R&D centers and their unique role in scientific and engineering education are essential ingredients in creating the long-term technical options required for formulating future national security strategies.

d. Balanced Technology Initiative

Our Balanced Technology Initiative (BTI) places emphasis on developing technologies that have the potential of providing significant advances in U.S. conventional force capabilities. The initiative focuses on smart weapons, armor/antiarmor technology, command, control, and communications/battle management, high-power microwaves, and related special technical areas. The BTI program will provide the technology critical to our developing competitive strategies vis-a-vis the Soviets, particularly for our conventional forces.

e. Laser Countermeasures

The potential for increased enemy use of laser weapons has accelerated our work on laser protection and hardening techniques for U.S. personnel, sensors, optics, and structures. Our laser

protection program is directed toward developing the capability to sustain our forces on the battlefield as these directed energy weapons make their appearance. Our first priority is, of course, to protect our personnel, followed by protection for sensors, optics, and structures. The program will seek innovative approaches to counter this serious laser threat.

f. Chemical Defense

As with laser countermeasures, an effective chemical defense capability is necessary to deter war, or to fight and win if deterrence fails. Products from our chemical defense program include significantly better protective masks for groundcrews and aircrews, a hand-held chemical agent monitor to assess contamination, and a lightweight vehicle decontamination system to improve operational effectiveness. Exciting developments in standoff chemical agent detection by frequency-agile lasers, generic detection of all agents using receptor site technology, and non-aqueous decontamination of electronics and sensitive material, all promise substantial improvements in our defense posture.

g. High Temperature Superconductivity

When cooled below a critical transition temperature, many materials become superconducting; that is, their resistance to the passage of electrical current effectively vanishes and they exhibit remarkable magnetic phenomena. Recent discoveries that superconductivity exists in certain ceramic materials at much higher temperatures than previously possible offers exciting possibilities for new military applications. These applications include improved magnetic and electromagnetic sensors, faster signal processing, more compact electric ship drives, more powerful electromagnetic launchers, and new magnetic energy storage devices. Because of our long history in superconductivity research, we are in an excellent position to exploit these recent developments.

h. Medical and Life Sciences

Our Medical and Life Sciences program is using advanced biomedical research techniques to improve our readiness posture. Recent achievements include:

- Storing red blood cells at -80° Fahrenheit, rendering them usable for the treatment of combat casualties for up to ten years;

- Isolating "Stem cells" -- the progenitors of white blood cells -- and their associated growth factors, permitting further development of methods for rejuvenating bone marrow injured by ionizing radiation; and
- Using computer modeling in designing new vaccines and drugs for preventing and treating infectious diseases in military personnel.

i. Sensors

Sensors and their associated signal processing are the "eyes and ears" for many of our systems. Progress in semiconductor R&D and the development of advanced algorithms are providing the basis for improving our force's capabilities. Projects under way include: automatic target recognition; low-observable target detection; new thermal detectors; and sonar, laser and microwave radar arrays. These projects collectively will provide commanders the ability to operate in future battles where weapon systems operation may outpace human sensing and reaction.

j. National Aerospace Plane

The Joint DoD/NASA National Aerospace Plane (NASP) program continues to make excellent progress. The current phase of the program focuses on maturing the critical technologies and demonstrating the major components required to build an experimental flight vehicle (the X-30). To date, technical objectives have been met and progress in developing advanced materials, active cooling devices, aerothermodynamic computational methods, ramjet/scramjet engines, and airframe designs has been made. The NASP program will help maintain the United States' leadership in aerospace technology and lead to advanced atmospheric and space transportation systems.

3. The Defense Advanced Research Projects Agency

The Defense Advanced Research Projects Agency (DARPA) is our central research facility, and is chartered with pursuing imaginative and innovative research ideas leading to systems with significant military utility. While our S&T program supports our operational forces by examining a broad range of technologies, DARPA's programs focus on technology development, proof-of-concept

demonstrations of revolutionary approaches, and prototyping. DARPA's investment strategy encourages assuming high risks when we identify a technology that, upon maturity, promises to provide a major advance in our military capability. Several representative DARPA programs are discussed below.

a. Strategic Computing

Our Strategic Computing program is developing machine intelligence technology and advanced parallel computer architecture. While this DARPA-funded program serves the needs of the military services, its goals also serve the commercial sector, and have the potential to lead the United States into a much needed new cycle of scientific, engineering, and economic activity in computer science hardware and software. Dominance in computing and information processing will play a pivotal role in determining the political and economic strength of nations, and this DARPA program will help to ensure that the United States retains its competitive advantage.

b. Armor / Antiarmor

Our recent progress toward bringing about the phased elimination of all intermediate-range nuclear forces has focused increased attention on the conventional arms imbalance in Europe. Ever since the Truman Administration, the United States has relied on nuclear weapons and high-quality conventional forces to offset Soviet quantitative superiority. Now, when we are relying more than ever on our conventional deterrent, the Soviets are fielding significantly more capable conventional weapon systems at prodigious rates. For example, the Soviets have made significant upgrades to the T-64 tank; have produced at least five new versions of the T-72 tank; and deployed the latest T-80 tank in significant numbers. A significant fraction of the 29,000 Soviet tanks arrayed against NATO have been fitted for reactive armor, which comprises explosive boxes attached to the tank's exterior that deflect, to some degree, the explosive force of our defensive antitank guided missiles such as the Tube-Launched, Optically Tracked, Wire-Guided (TOW) and Dragon. These developments in one crucial area of conventional forces remind us that nuclear arms control agreements, no matter how desirable in the abstract, may place a heavier burden on our conventional forces. Thus, to continue deterring aggression, these forces must be provided with technologically superior equipment and be fielded in sufficient strength.

In December 1985, DARPA was directed to head a joint program with the Army and Marines to examine the prospects for a significant advance in armor and antiarmor technology. In the fall of

1987, we tested some advanced designs in chemical energy (shaped charge) warheads, kinetic energy penetration, and armor protection. The first major "shootoff" evaluations are to be held this year at Los Alamos National Laboratory. We expect this research into basic protection and penetration mechanisms will allow us to understand them more fully, and help us achieve a modernization rate competitive with the threat.

c. Lightsat

Lightsat is our new DARPA program whose goal is to provide enduring spaceborne support to the battlefield commander in conflicts where the use of our national space assets would be denied due to Soviet attacks on our satellites, ground stations, or both. Owing to the critical nature of this support, DARPA was directed by the Congress to develop the technologies needed to reconstitute some fraction of our current national command, control, communications, and intelligence (C³I) capabilities. DARPA expects to demonstrate satellite systems that will be responsive to the commander's needs, but which will be less complex and less technically capable than the satellites they would replace during war. DARPA is developing a five-year program that will concentrate initially on novel, low cost, transportable boosters, and proceed later to new types of payloads specifically designed for wartime requirements. Initial plans call for the first launch of a Lightsat payload 18 to 24 months after program start. Later payloads will incorporate increasingly complex technology, but will remain within the guidelines of simplicity, with a goal of limiting booster and payload costs to less than \$20 million.

4. Test and Evaluation

We conduct realistic and thorough test and evaluation (T&E) at the facilities shown in Chart IV.C.1. Although our primary focus has been to improve major weapon systems testing, new initiatives to enhance the overall quality of our methodology and resources have moved forward under the leadership of the Director, Operational Test and Evaluation (DOT&E) and the Deputy Director, Defense Research and Engineering, Test and Evaluation (DDDR&E(T&E)).

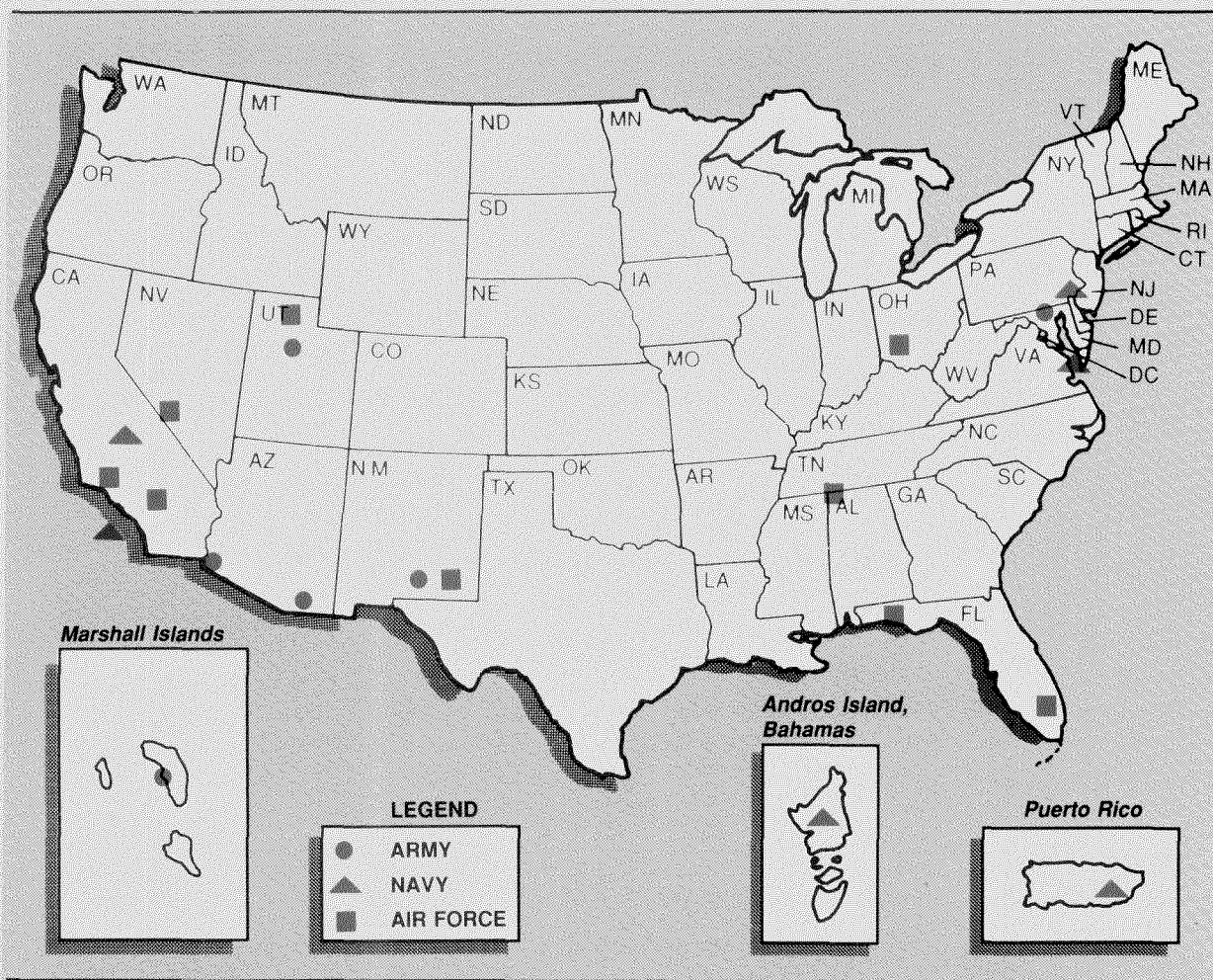
a. Systems Test and Evaluation

Our DDDR&E(T&E) weapons system assessment group has evaluated and provided formal guidance and assessment on over 75 of the major weapons systems designated for oversight. Our emphasis on international T&E continues with the NATO Comparative Test and Foreign Weapons Evaluation Programs. These efforts support the

T&E of NATO and other foreign nations' weapon systems, equipment, and technology, and evaluate their suitability for use by U.S. forces, thereby avoiding unnecessary duplication in R&D costs. These programs have funded the T&E of over 70 projects in the past year. The projects selected involve the major industrialized nations, with those from the United Kingdom, France, Germany, and Israel comprising the majority.

Chart IV.C.1

Major U.S. Test and Evaluation Facilities



b. Long-Term Improvements

Recent and anticipated advances in weapon systems technology, coupled with our aggressive initiatives to ensure earlier and more comprehensive testing, mandate a continuing effort to expand our

T&E capabilities. This is especially true in the areas of space systems testing and simulation, nuclear hardening, and hypersonic vehicle development and testing. These areas are the focus of the Space Systems Test Capabilities (SSTC) Study, Phase II, which will validate our anticipated long-range test capability needs for the 21st century, and refine potential solutions to allow timely programming of resources.

The Test and Evaluation Committee (TEC) of the Defense Acquisition Board (DAB) has an ongoing T&E management and investment initiative to improve the productivity and quality of the Major Range Test Facility Base (MRTFB) through better and more comprehensive long-range (15 year) planning of national test support capabilities. An in-depth investigation of our current test planning process has been completed, and recommendations to improve the process are being considered. Improved planning is expected to provide us with a more cost-effective corporate T&E investment basis.

c. Special Emphasis

The FY 1987 National Defense Authorization Act recognized the importance of fielding less vulnerable and more lethal conventional weapon systems and munitions by requiring live fire testing (LFT) on these systems prior to their entering full-scale production. In response to this legislation, we established the position of Assistant Deputy Director (Test and Evaluation/Live Fire Testing), with 44 weapons systems initially identified by the Services for LFT. The Joint Test and Evaluation (JT&E) program, managed by DDDR&E(T&E), examines developing and deployed systems' capability to perform their intended missions in a joint environment. Two JT&Es -- the Command, Control, Communications Countermeasures, and the Identification, Friend, Foe, or Neutral -- will be completed in FY 1989. New JT&E Programs, sponsored by the DDDR&E(T&E), will focus on tests requiring quick response to address issues of immediate interest to DoD and the Congress.

d. Operational Test and Evaluation

Operational test and evaluation (OT&E) activities continued expanding in FY 1987. The office of the DOT&E maintained and enhanced its oversight of over 180 defense acquisition programs. We have launched an initiative to improve dramatically our ability to conduct realistic OT&E. This initiative is designed to develop a national capability to conduct realistic air defense electronic combat in an AirLand Battle environment. The core program focuses on obtaining air defense scenario-oriented mobile/transportable instrumentation, threat systems, and threat simulators.

5. Defense Nuclear Agency Programs

a. Goals and Major Responsibilities

The Defense Nuclear Agency (DNA) is responsible for determining nuclear weapons effects and developing the technology necessary to ensure the survivability and effectiveness of our combat forces during a nuclear conflict. DNA's evaluation of existing strategic, tactical, and C³I systems' nuclear hardness -- the ability to withstand various nuclear effects -- contributes directly to reducing the risk of conflict. DNA sponsors a broad range of nuclear-related efforts to provide timely force sizing, basing, and weapons employment information for the Department of Defense, the Services, and the CINCs. To support these objectives, DNA coordinates all our nuclear weapons effects research and plans, while coordinating and executing both above-ground effects simulation and underground nuclear tests.

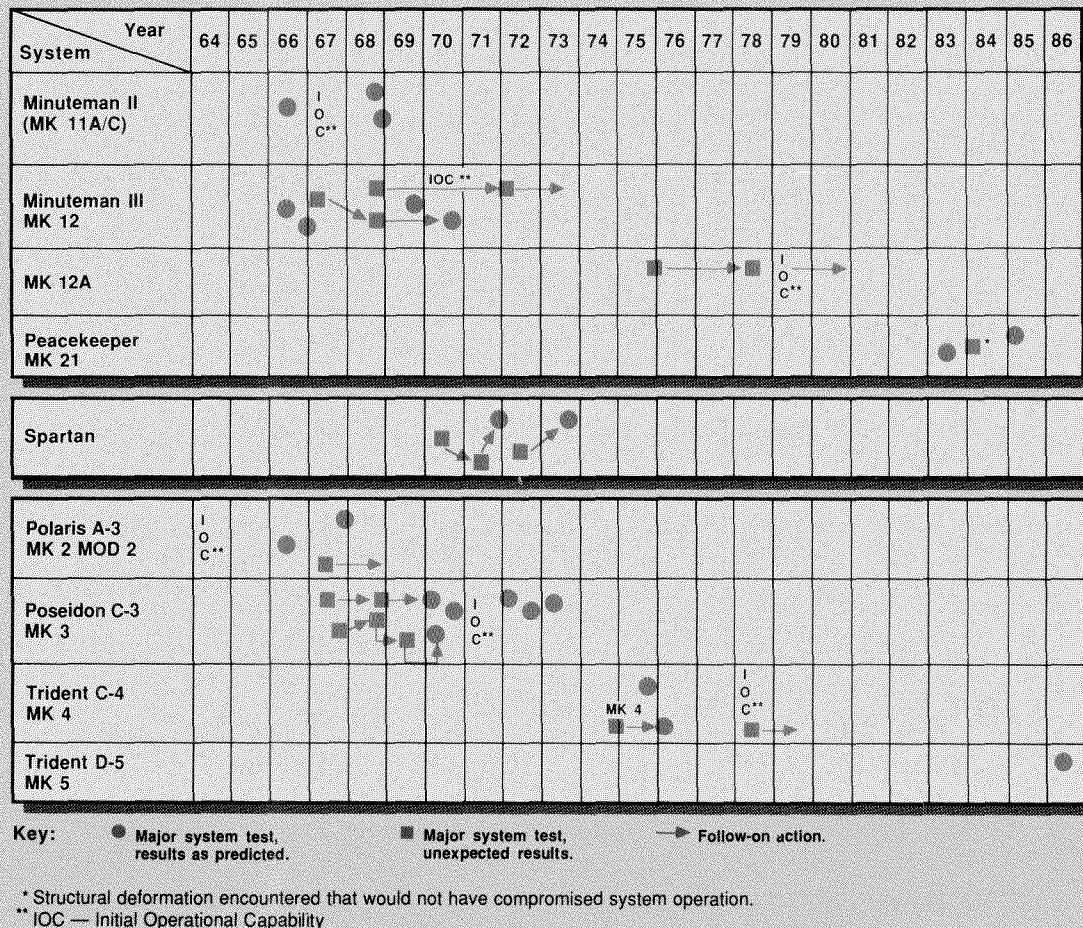
b. Importance of Underground Nuclear Weapons Effects Testing

DNA's analysis and testing process is crucial in validating the survivability of systems that we are procuring and deploying. Although we have substantial experience in designing certain types of nuclear-hardened systems, changing requirements dictate the need to improve our systems. Experience has shown that extensive use of analysis and nonnuclear simulation is not adequate to establish the required levels of confidence in the nuclear hardness of a new system. Chart IV.C.2. shows the history of nine major nuclear weapons systems brought into the inventory during the past 24 years, and illustrates that even after extensive analyses and nonnuclear simulation tests, critical nuclear survivability deficiencies were uncovered during underground tests. Many of these defects would have caused mission failure. Modifications were made to correct deficiencies and subsequent experiments conducted to establish each system's survivability.

In the event of a testing moratorium or a comprehensive test ban, we would only be able to conduct nonnuclear simulation experiments and computational analyses to examine weapons effectiveness and survivability issues. These nonnuclear simulation experiments would not provide us with an acceptable degree of confidence that our systems would function as desired. In summary, at this time there are simply no realistic alternatives to underground testing.

Chart IV.C.2

Results of Underground Nuclear Effects Testing



c. Simulator Development

Steady progress has been made in enhancing our resources for nuclear effects simulation in above-ground, nonnuclear facilities. Although these simulators cannot at present replace the function of underground testing, technology is available today to construct new, more capable simulators. These new simulators are needed to test clusters or ensembles of satellite subsystems to threat levels of interest. Today we can test only single subsystems, each the size of a breadbox, to these threat levels.

6. Conclusion

The programs and projects highlighted above demonstrate our strong commitment to ensuring a superior technological base for our weapons systems. Our FY 1989 budget request has been structured to maintain the technological leadership necessary to counter the Soviet threat. We must not back away from our R&D commitments, which pay handsome dividends in preserving the common defense.

D. MILITARY HEALTH CARE

1. Introduction

Our military health care system's primary responsibility is to be medically ready in time of war to meet all requirements for life-saving care. In the coming year, the deliberate effort we started several years ago to improve our medical readiness will dominate our decisions concerning military medicine. Our annual military medical budget of over \$12 billion funds our efforts to support our troops and our other beneficiaries, and to operate the 168 military hospitals and over 800 medical and dental clinics worldwide.

2. Achievements During the Reagan Administration

a. Medical Readiness

Following the tragic bombing of the Marine Corps barracks in Beirut in October 1983, we identified shortcomings in our medical readiness capability and redressed them in these ways:

- We appointed a full-time Command Surgeon to direct tri-Service medical operations in the European Command.
- We established a single medical logistics manager for medical materiel in Europe to improve medical logistics support for both peacetime operations and wartime contingencies.
- We developed and put into operation in 1987 the Deployable Medical Systems (DEPMEDS) program, which existed as only a concept in 1982. DEPMEDS comprises a building block system of functional medical modules for use by all Service hospitals from the most forward to the most rearward edges of a theater of operations. All Services will now be using the same medical equipment, thereby improving medical support for combat operations and enhancing medical logistics support.

- We identified and brought together in a comprehensive and dynamic plan the methods to acquire all medical resources required to support our operating forces. This plan, the Department of Defense Medical Readiness Strategic Plan, protects the future of military medicine and the delivery of health care services as we design for war and modify for peace.
- The United States Navy hospital ship MERCY completed a medical training and humanitarian assistance mission to the Republic of the Philippines in July 1987. MERCY visited seven Philippine ports where over 62,000 patients were treated, including 848 major surgical cases.

One of our most challenging tasks is redirecting the specialty mix of our medical personnel to match more closely the specialty skills most needed in wartime. This task involves intense efforts to recruit, train, and retain on active duty the medical personnel who can best assist with the large surgical workload expected in wartime. The vast majority of medical people needed in wartime, however, will be supplied by the reserves. Significant improvements have been achieved over the last five years in recruiting and retaining health professionals. Since 1981, staffing levels for Ready Reserve health professionals have increased by 78 percent for physicians and by 68 percent for nurses. Despite this progress, however, if a general war started today we would be short over 7,000 physicians and 31,000 nurses. Individuals possessing needed wartime specialty skills are being recruited into the reserves through a combination of stipend and loan repayment programs which, when fully implemented, will attract the kinds of specialties we need during wartime.

b. Quality of Care

Preparing for war has not detracted from the importance we place on providing the highest quality care in peacetime. Our efforts to improve the quality of health care for our beneficiaries continue to expand.

We now have formally established internal quality assurance procedures, and have developed a unique external civilian peer review process. The American Medical Peer Review Association observed last fall that the success of our program "may well signal the shape and substance of peer review in the future." Indeed, we continue to compare favorably to the civilian sector in medical malpractice claims filed. In 1986, the rate of medical malpractice claims filed by DoD beneficiaries was 6.6 per 100

physicians, as compared to a civilian rate of approximately 16 claims filed per 100 physicians.

c. Drug Testing Program / Anti-Smoking Campaign

Due to major improvements during the past several years, the military drug testing program is now the nationally recognized model. Rigorous laboratory and drug analysis certification procedures, forensic specimen handling procedures, and regular quality control laboratory inspections have contributed to the legal and scientific supportability of all results. Our progress is significant: all signs point to a drop in use of illicit drugs in the military.

Our health promotion efforts extend beyond decreasing the incidence of drug abuse in our military personnel. In 1986, an intense anti-smoking campaign was begun throughout the department. Preliminary results from Service-conducted surveys indicate that a decrease in tobacco consumption has occurred, as well as a decrease in the sale of tobacco products on military bases.

In addition to our drug, alcohol, and tobacco campaigns, our health promotion program involves a comprehensive effort designed to improve personnel readiness and reduce medical care costs through increased attention to our members' life style behaviors in the areas of physical fitness, nutrition, stress management, and high blood pressure control.

d. Human Immunodeficiency Virus and AIDS Infection

The AIDS outbreak poses unique problems for our military health care system. The increased potential for military personnel to be exposed to severe infectious diseases when deployed overseas poses an obvious, perhaps fatal hazard to individuals with a disorder of the immune system. In addition, we must maintain the reliability of our buddy-based blood bank so that soldiers can rely on others in their unit for blood transfusions required during contingencies. Our detailed policy prohibits individuals with serologic evidence of the Human Immunodeficiency Virus (HIV) infection from being appointed or enlisting in the military service. Active duty and reserve component personnel are also screened. The rate of HIV positives among recruit applicants (1.5 per 1,000 tested) virtually parallels the active-duty rate (1.6 per 1,000). Active-duty personnel confirmed to have serologic evidence of HIV infection receive extensive evaluation, psychological support, and treatment if necessary, and are medically separated or retired if disabled. We are also conducting an extensive education program and work in close cooperation with the

National Institutes of Health and Centers for Disease Control on HIV/AIDS research and treatment.

*e. Efforts to Reform the Civilian Health and Medical
Program of the Uniformed Services*

Among the greatest challenges facing the Military Health Services System is reform of the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). DoD has awarded to a consortium of prominent health care companies and not-for-profit hospitals a contract of unprecedented nature and scope for improved medical programs. This contract, worth potentially \$3 billion over five years, will provide improved medical benefits for military families, case management of their health care, and innovative financial incentives to hold down taxpayer costs in two states, California and Hawaii. It implements the CHAMPUS Reform Initiative demonstration project under development for the past two years.

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Another major accomplishment in CHAMPUS cost containment is our implementation last October of a new Diagnosis Related Group (DRG)-based system of paying for most hospital care purchased under the CHAMPUS program. Before implementation of the DRG-based system, CHAMPUS was purchasing hospital services by paying billed charges -- a method of payment abandoned several years ago by the Medicare program as being too costly. Now our payment amounts are set prospectively. By grouping our payments according to the average cost to the hospital for each of over 470 diagnoses, as adapted from the Medicare system, we expect to cut government payments by approximately \$150 million in FY 1988 and by some \$1.5 billion across the Five-Year Defense Program (FYDP). For our beneficiaries, cost-sharing amounts will be reduced by almost one-third under the new DRG payment system.

We have also implemented a new Military-Civilian Partnership Program allowing CHAMPUS-authorized providers to offer care on the premises of military treatment facilities. This new program represents a significant opportunity for cost savings by providing more care in less expensive military settings while increasing the availability of services in military treatment facilities.

In our effort to enhance services to our beneficiaries, we have established a voluntary enrollment dental insurance program for dependents of active-duty members, with the government paying 60 percent of the insurance premium. This program began on August 1, 1987, and approximately 86 percent of eligible persons have enrolled.

f. Strengthening Management of the Military Health Care System

We take great pride in the fact that in 1987 we began operating the first Joint Military Medical Command (JMMC) in San Antonio, Texas. As a part of this joint command, a new facility with a massive ambulatory care capability will replace the Brooke Army Medical Center (BAMC) hospital. This facility will be constructed at a cost of some \$122 million less than the replacement hospital originally planned before implementation of the joint command concept. The BAMC replacement facility will be a unique, surgically and diagnostically intense teaching hospital that will contain state-of-the-art facilities normally seen only in hospitals at least twice its size. The San Antonio JMMC, with its combined medical resources, is designed to provide more flexibility to meet the health care needs of eligible beneficiaries in that metropolitan area. A second joint operation is being planned in the Delaware Valley Area. We will continue to establish joint medical commands wherever conditions lend themselves to such an arrangement.

We are also continuing to encourage the sharing of medical facilities and personnel, not only among the Services, but with the Veterans Administration. At the start of FY 1987, a total of 388 sites participated in the DoD/VA sharing program, a 54 percent increase over FY 1986. These efforts, combined with thorough and vigorous reviews of all medical resource requirements, will assure that our finite resources are used to provide excellent, cost-effective medical care.

Another major management improvement is the congressionally directed effort to use DRGs in allocating resources to our military hospitals. Once DRGs are in place, they will serve as a management tool to ensure that our medical dollars are allocated based on the quantity of specifically identified cases treated rather than on estimated workload. We have adopted a phased approach for DRG-based allocations and expect to have the system operational at the start of FY 1989.

g. Medical Construction Program

Last year we reported on the establishment of the Defense Medical Facilities Office (DMFO), consolidating the medical construction programs of the three Services. The newly formed DMFO has now created a system for selecting and prioritizing

medical construction projects worldwide to ensure that our most urgent requirements are met.

The problem looming before us now is that of obtaining funding for badly needed overseas projects in support of medical readiness. Overseas hospital projects at Echternach, Luxembourg; Clark Air Base, the Philippines; and Naples, Italy must not be delayed any longer. Improvements are desperately needed at these isolated locations to ensure the care of our Service personnel and their families is not compromised by unsafe and outmoded facilities, and to provide the required capability to meet wartime medical missions. These overseas projects, with their related readiness implications, are our highest medical construction priority. I urge the Congress to make these projects its highest priority as well. Let us not wait until the United States needs these facilities to treat incoming wounded from an overseas conflict to recognize that our hospitals are in poor condition and should have been replaced long ago.

h. Strengthened Central Management of Medical Information Systems

As in the case of medical readiness, we found our medical information systems' capability sorely lacking. The Defense Medical Systems Support Center was established to ensure that health services information systems design and operation were integrated across the three Military Departments. Finally, our long-recognized need for standard, integrated, and modern automation support for our hospitals and clinics will be realized through the deployment of the Composite Health Care System (CHCS). Health care providers spend too much time searching for and deciphering clinical information. The CHCS will return this time to doctors, nurses, and other health personnel, freeing them to give more direct patient care.

3. Conclusion

This Administration is proud of its record in effecting significant improvements in both wartime medical readiness and peacetime medical care. In the coming year, these efforts will continue. We look to the final months of the Administration as a time to ensure that our programs and initiatives improve and mature.

E. ANTI-DRUG PROGRAMS

1. Introduction

The Department of Defense (DoD) remains committed to the President's program to end drug abuse in America. We are developing new programs to fight drug abuse in the DoD community, and are assisting local and international law enforcement agencies involved in eradicating or interdicting illegal drugs.

2. Drug-Free Workplaces

The Department of Defense will begin drug testing of its civilian work force during the second quarter of 1988 in conjunction with other Federal Departments and Agencies. Our efforts to begin DoD-wide testing last year were delayed by additional congressional requirements in the 1987 Supplemental Appropriations Bill. Each Service and DoD Component may randomly test civilians occupying designated positions concerned with safety or national security; these positions comprise approximately 15 percent of DoD civilian work force positions. The Services and DoD Components may also test individuals applying for jobs in these positions, and individuals involved in safety accidents or reasonably suspected of drug abuse. The Services and DoD Components will determine the number of positions designated for testing, and testing frequency. A major goal of our drug-free workplace program is to help our civilian personnel overcome drug dependency when it is discovered.

3. Increased Public Awareness and Prevention

During the past year, we have increased considerably the DoD community's awareness of drug abuses's negative effects on the individual, and on productivity and safety in the workplace. Our military recruiters have been charged with promoting a drug-free America in their frequent contacts with youth, through recruiter interviews, videos, posters, and pamphlets. Each military service has also developed other unique programs to promote a drug-free America.

We are also responsible for educating over 190,000 DoD dependent children. Several new programs have been started to inform these children about the dangers of illegal drug use. A new education prevention program modeled after DARE (Drug Abuse Resistance Education), a joint project of the Los Angeles Police Department and the Los Angeles Unified School District, is being

piloted in the DoD schools. This program uses military policemen as instructors in drug abuse prevention in elementary and middle schools. In addition to the DARE program, all DoD schools are participating in the nationwide federal campaign to ensure that DoD schools are free from drugs.

We have also extended a special challenge to the citizen-soldiers of our National Guard and Reserve. Each has been asked to carry the President's message on drug abuse eradication into their workplace, schools, and communities.

4. Strengthened Law Enforcement

FY 1987 reflected another step in the trend of ever-increasing DoD support to the nation's "War on Drugs." The Military Services provided over 17,000 hours of aerial surveillance and the Navy provided 2,512 ship days with embarked Coast Guard Law Enforcement Detachments (LEDETS) in support of Operation "Hat Trick." This operation, coordinated by the Office of the Vice President, combines federal, state, and local law enforcement efforts to interdict drug smugglers. Additionally, we have furnished to law enforcement agencies mobile radar and ground sensor support; training; expert advice on procurement and architecture of communications equipment and command, control, communications, and intelligence (C³I) facilities; and drug enforcement-related information collected during military operations. Currently, more than \$360 million of DoD equipment has been loaned, procured, or provided to drug law enforcement authorities for anti-drug use. Military support to civilian authorities responsible for drug law enforcement enhances their anti-drug capability, and abides by the legal distinction specified by Title 10 of the U.S. Code, Sections 371-379, "Military Cooperation with Civilian Law Enforcement Officials."

5. Improved International Cooperation

Many governments have become acutely aware of the growing threat of drug abuse and drug trafficking to national and regional stability. In response to requests for assistance during FY 1987, DoD, in cooperation with the Departments of State and Justice, actively supported international efforts to eradicate and interdict illicit drug commodities, precursor chemicals, and narcotic consumables. Military assistance to foreign governments in Latin America, the Near East, South Asia, and the Pacific included training, loan of equipment, intelligence, and logistics in support of anti-narcotics operations. For example, in the Bahamas, U.S. Army helicopter crews provided transportation that permitted the quick insertion of Bahamian Strike Force personnel into drug cache sites. Six military helicopters were loaned to

the State Department for use by the Bolivian Air Force as a follow-on to U.S. military assistance in the very successful 1986 "BLAST FURNACE" operation. The helicopters support various anti-narcotics missions. Additionally, various military advisors and training teams supported programs to improve the capability of foreign countries to counter drug trafficking more effectively.

6. Conclusion

We are proud of our substantial role in President Reagan's war on illegal drugs. By seriously undermining the fabric of society, drug abuse degrades the manpower pool from which we draw DoD military and civilian personnel. With the support of the Congress, we will continue our role in the campaign to prevent and eliminate the corrosive influences of illegal drugs in our society.

Appendices

Appendix A

Table 1

Department of Defense - B/A by Appropriation ^a

(Dollars in Millions)

	FY 1983	FY 1984	FY 1985	FY 1986 ^b	FY 1987	FY 1988	FY 1989
Current Dollars							
Military Personnel	45,688	48,363	67,773	67,867	74,010	76,145	78,399
Retired Pay	16,155	16,503	*	*	*	*	*
Operation & Maintenance	66,540	70,950	77,803	74,888	79,607	80,684	85,649
Procurement	80,355	86,161	96,842	92,506	80,234	81,027	80,037
Research, Development, Test and Evaluation	22,798	26,867	31,327	33,609	35,644	36,695	38,157
Special Foreign Currency Program	4	3	9	2	4	—	—
Military Construction	4,512	4,510	5,517	5,281	5,093	5,354	5,743
Family Housing & Homeowners Assistance Program	2,712	2,669	2,890	2,803	3,075	3,149	3,272
Revolving & Management Funds	1,075	2,774	5,088	5,235	2,612	830	764
Trust Funds, Receipts & Deductions	-365	-650	-447	-1,055	-809	-726	-1,237
Total—							
Direct Program (B/A)	239,474	258,150	286,802	281,136	279,469	283,159	290,784
Constant FY 1989 Dollars							
Military Personnel	56,874	57,481	75,277	73,178	78,760	78,543	78,399
Retired Pay	19,721	19,484	*	*	*	*	*
Operation & Maintenance	78,763	82,790	88,720	85,185	87,841	83,605	85,649
Procurement	97,881	101,552	110,736	102,444	85,815	83,669	80,037
Research, Development, Test and Evaluation	27,863	31,679	35,836	37,438	38,426	38,035	38,157
Special Foreign Currency Program	5	4	10	2	4	—	—
Military Construction	5,523	5,345	6,337	5,888	5,478	5,535	5,743
Family Housing & Homeowners Assistance Program	3,256	3,113	3,276	3,108	3,312	3,263	3,272
Revolving & Management Funds	1,311	3,260	5,782	5,787	2,811	862	764
Trust Funds, Receipts & Deductions	-445	-764	-508	-1,165	-871	-754	-1,237
Total—							
Direct Program (B/A)	290,752	303,942	325,467	311,864	301,575	292,758	290,784

^a Numbers may not add to totals due to rounding.^b Lower Budget Authority in the Military Personnel Accounts in FY 1986 reflects the congressional direction to finance \$4.5 billion for the military pay raise and retirement accrual costs by transfers from prior year unobligated balances.

* Retired Pay accrual included in Military Personnel Appropriation.

Table 2

Department of Defense - B/A by Component ^a

(Dollars in Millions)

	FY 1983	FY 1984	FY 1985	FY 1986 ^b	FY 1987	FY 1988	FY 1989
Current Dollars							
Department of the Army	57,529	62,181	74,270*	73,149*	73,994*	75,790*	77,806*
Department of the Navy	81,854	82,088	99,015*	96,131*	93,500*	100,141*	96,437*
Department of the Air Force	74,074	86,108	99,420*	94,903*	91,624*	88,150*	97,224*
Defense Agencies/OSD/JCS	9,256	10,746	13,126	15,520	19,185	17,015	18,611
Defense-wide	16,761	17,027	970	1,433	1,168	2,064	706
Total—							
Direct Program (B/A)	239,474	258,150	286,802	281,136	279,469	283,159	290,784
Constant FY 1989 Dollars							
Department of the Army	70,991	73,924	84,570*	81,105*	79,797*	78,345*	77,806*
Department of the Navy	99,176	96,526	112,313*	106,571*	100,812*	103,471*	96,437*
Department of the Air Force	88,607	100,515	112,264*	105,108*	98,883*	91,177*	97,224*
Defense Agencies/OSD/JCS	11,517	12,876	15,215	17,489	20,829	17,626	18,611
Defense-wide	20,461	20,101	1,106	1,590	1,254	2,138*	706
Total—							
Direct Program (B/A)	290,752	303,942	325,467	311,864	301,575	292,758	290,784

^a Numbers may not add to totals due to rounding.^b Lower Budget Authority in the Military Personnel Accounts in FY 1986 reflects the congressional direction to finance \$4.5 billion for the military pay raise and retirement accrual costs by transfers from prior year unobligated balances.

* Includes Retired Pay accrual.

Table 3

Federal Budget Trends

(Dollars in Millions)

Fiscal Year	Federal Outlays as a % of GNP	DoD Outlays as a % of Federal Outlays	DoD Outlays as a % of GNP	Non-DoD Outlays as a % of Federal Outlays	Non-DoD Outlays as a % of GNP	DoD Outlays as a % of Net Public Spending*
1950	16.0	27.5	4.4	72.5	11.6	18.5
1955	17.6	51.5	9.1	48.5	8.6	35.6
1960	18.2	45.0	8.2	55.0	10.0	30.3
1965	17.5	38.8	6.8	61.2	10.7	25.2
1970	19.8	39.4	7.8	60.6	12.0	25.5
1971	19.9	35.4	7.0	64.6	12.8	22.4
1972	20.0	32.6	6.5	67.4	13.5	20.6
1973	19.1	29.8	5.7	70.2	13.4	19.0
1974	19.0	28.8	5.5	71.2	13.5	18.3
1975	21.8	25.5	5.6	74.5	16.2	16.5
1976	21.9	23.6	5.2	76.4	16.7	15.4
1977	21.1	23.4	4.9	76.6	16.2	15.5
1978	21.1	22.5	4.7	77.5	16.4	15.2
1979	20.5	22.8	4.7	77.2	15.8	15.4
1980	22.2	22.5	5.0	77.5	17.2	15.3
1981	22.7	23.0	5.2	77.0	17.5	15.8
1982	23.7	24.5	5.8	75.5	17.9	16.7
1983	24.3	25.4	6.2	74.6	18.2	17.3
1984	23.1	25.9	6.0	74.1	17.1	17.5
1985	24.0	25.9	6.2	74.1	17.8	17.7
1986	23.6	26.8	6.3	73.2	17.3	18.1
1987	22.8	27.3	6.2	72.7	16.6	18.0
1988	22.4	26.2	5.9	73.8	16.5	17.5
1989	21.7	26.1	5.7	73.9	16.0	17.0

* Federal, State, and Local net spending excluding government enterprises (such as the postal service and public utilities) except for any support these activities receive from tax funds.

Table 4

Defense Shares of Economic Aggregates

Fiscal Year	DoD as a Percentage of Public Employment		DoD as a Percentage of National Labor Force		National Income Accounts Percentage of Total Purchases		
	Federal	Federal State & Local	Direct Hire (DoD)	Including Industry	National Defense*	Total Federal	State & Local
1965	71.3	29.3	5.0	7.8	7.3	9.8	9.8
1966	73.0	30.6	5.6	9.0	7.5	10.0	10.0
1967	74.1	31.5	6.0	10.0	8.7	11.0	10.4
1968	74.0	31.3	6.1	10.0	9.0	11.4	10.8
1969	73.2	30.1	5.9	9.4	8.5	10.8	11.0
1970	72.3	27.7	5.3	8.1	7.9	10.1	11.4
1971	68.3	24.3	4.6	7.0	7.1	9.3	12.0
1972	66.0	21.5	4.0	6.2	6.6	9.0	12.0
1973	65.0	20.4	3.7	5.8	6.0	8.2	11.8
1974	63.8	19.4	3.5	5.5	5.6	7.7	12.0
1975	62.9	18.6	3.4	5.3	5.7	8.1	12.8
1976	62.5	18.1	3.3	5.0	5.4	7.8	12.7
1977	62.5	17.5	3.2	5.0	5.1	7.6	11.9
1978	61.9	17.0	3.1	4.8	4.9	7.3	11.8
1979	61.1	16.5	2.9	4.7	4.8	7.1	11.5
1980	61.3	16.5	2.8	4.7	5.1	7.5	11.8
1981	62.4	17.1	2.8	4.7	5.4	7.8	11.4
1982	63.2	17.4	2.8	4.9	6.0	8.4	11.5
1983	63.5	17.4	2.9	5.1	6.3	8.7	11.6
1984	63.7	17.5	2.8	5.3	6.2	8.1	11.2
1985	63.3	17.4	2.9	5.5	6.4	8.7	11.5
1986	63.0	17.2	2.8	5.6	6.6	8.8	11.8
1987	63.2	17.0	2.8	5.5	6.6	8.5	12.1

* Includes Department of Defense—military, atomic energy defense activities, and other defense-related activities, such as emergency management and maintenance of strategic stockpiles and the Selective Service System.

Appendix B

Table 1

**Department of Defense
General and Flag Officer Strengths**

Actual	General & Flag Officer Strengths	General & Flag Officers Per 10,000 Total Military
1961	1,254	5.0
1962	1,303	4.6
1963	1,292	4.8
1964	1,294	4.8
1965	1,287	4.8
1966	1,320	4.3
1967	1,334	4.0
1968	1,352	3.8
1969	1,336	3.9
1970	1,339	4.4
1971	1,330	4.9
1972	1,324	5.7
1973	1,291	5.7
1974	1,249	5.8
1975	1,199	5.6
1976	1,184	5.7
1977	1,159	5.6
1978	1,119	5.4
1979	1,119	5.5
1980	1,119	5.4
1981	1,073	5.2
1982	1,073	5.1
1983	1,073	5.1
1984	1,073	5.0
1985	1,073	5.0
1986	1,073	5.0
1987	1,073	4.9
Programmed		
1988	1,073	4.9
1989	1,073	4.9

Table 2

**Department of Defense
Officer Strength - In Thousands**

Actual	Officer Strengths*	Enlisted to Officer Ratio
1961	315	6.9
1962	343	7.2
1963	334	7.1
1964	337	7.0
1965	339	6.8
1966	349	7.9
1967	384	7.8
1968	416	7.5
1969	419	7.3
1970	402	6.3
1971	371	6.3
1972	336	5.9
1973	321	6.0
1974	302	6.2
1975	292	6.3
1976	281	6.4
1977	275	6.5
1978	273	6.5
1979	273	6.4
1980	276	6.3
1981	283	6.3
1982	290	6.2
1983	299	6.1
1984	303	6.0
1985	309	5.9
1986	311	5.9
1987	313	5.0
Programmed		
1988	314	5.9
1989	315	5.9

* Includes all active forces officers on extended active duty.

Table 3

Military and Civilian Personnel Strength ^a**(End Fiscal Years - In Thousands)**

	Actuals									Programmed	
	FY 1976	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987	FY 1988	FY 1989
Active Component Military											
Army	779	777	781	780	780	780	781	781	781	772	772
Navy	524	517	529	542	558	565	571	581	587	593	593
Marine Corps	192	188	191	192	194	196	198	199	200	197	197
Air Force	585	558	570	583	592	597	602	608	607	576	576
Total	2,081	2,040	2,071	2,097	2,123	2,138	2,151	2,169	2,174	2,138	2,138
Reserve Component Military (Selected Reserve)											
ARNG	362	367	389	408	417	434	440	446	453	457	465
Army Res	195	213	232	257	266	275	292	310	319	324	339
Naval Res ^b	97	97	98	105	109	121	130	142	149	153	162
MC Reserve	30	36	37	40	43	41	42	42	43	44	45
ANG	91	96	98	101	102	105	109	113	113	116	118
Air Force Res	48	60	62	64	67	70	75	79	80	82	86
Total	823	869	917	975	1,005	1,046	1,088	1,130	1,157	1,176	1,213
Direct Hire Civilian											
Army ^c	329	312	318	321	332	344	359	354	357	340	340
Navy	311	298	310	308	328	332	342	332	343	337	329
Air Force ^c	248	231	233	235	238	240	250	250	252	252	250
Defense Agencies	71	75	79	80	81	85	91	92	96	97	97
Total	959	916	940	945	980	1,000	1,043	1,027	1,049	1,027	1,016

^a Numbers may not add to totals due to rounding.^b Navy Training and Administration of Reserves (TARS) personnel are counted in the Selected Reserve from FY 1980 on. Prior to FY 1980, TAR personnel are included in the Active Military.^c These totals include Army and Air National Guard technicians, who were converted from State to Federal employees in FY 1979.

Table 4

U. S. Military Personnel in Foreign Areas ^a
 (End-Year - In Thousands)

	FY 1976 ^b	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1986	FY 1987
Germany	213	239	244	248	256	254	254	247	250	250
Other Europe	61	61	65	64	67	70	73	75	75	73
Europe, Afloat	41	25	22	25	33	18	25	36	32	31
South Korea	39	39	39	38	39	39	41	42	43	45
Japan	45	46	46	46	51	49	46	47	48	50
Other Pacific	27	15	15	15	15	15	16	16	17	18
Pacific Afloat (Including Southeast Asia)	24	22	15	25	33	34	18	20	20	17
Miscellaneous Foreign	8	11	42	39	34	41	38	32	38	40
Total	460	458	489	502	528	520	511	515	523	524

^a Numbers may not add to totals due to rounding.
^b September 30 data used for consistency.

Table 5

Title IV, Goldwater-Nichols DoD Reorganization Act of 1986

Promotion Rate Comparisons (FY 1987)					
Army					
Promotion To: Major General	Competitive Category: Army				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	50%	N/A	25%	37%	41%
Below Promotion Zone	N/A	N/A	N/A	N/A	N/A
	*Officers Who Are Serving or Have Served In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	50%	N/A	25%	37%	41%
Below Promotion Zone	N/A	N/A	N/A	N/A	N/A

Promotion Rate Comparisons (FY 1987)					
Army					
Promotion To: Brigadier General	Competitive Category: Army				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	4%	N/A	6%	2%	2%
Below Promotion Zone	N/A	N/A	N/A	N/A	N/A
	*Officers Who Are Serving or Have Served In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	4%	N/A	6%	2%	2%
Below Promotion Zone	N/A	N/A	N/A	N/A	N/A

Promotion Rate Comparisons (FY 1987)					
Army					
Promotion To: Colonel	Competitive Category: Army				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	60%	N/A	47%	25%	45%
Below Promotion Zone	1%	N/A	2%	1%	1%
	*Officers Who are Serving or have Served in:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	60%	N/A	47%	25%	45%
Below Promotion Zone	1%	N/A	2%	1%	1%

* Includes officers who have served since October 1, 1986.

Table 5

Title IV, Goldwater-Nichols DoD Reorganization Act of 1986
(Continued)

Promotion Rate Comparisons (FY 1987)					
Army					
Promotion To: Lieutenant Colonel	Competitive Category: Army				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	100%	N/A	93%	70%	70%
Below Promotion Zone	0%	N/A	10%	5%	5%
*Officers Who Are Serving or Have Served In:					
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	100%	N/A	93%	70%	70%
Below Promotion Zone	0%	N/A	10%	5%	5%

Promotion Rate Comparisons (FY 1987)					
Navy					
Promotion To: Captain	Competitive Category: Supply				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	0%	N/A	0%	0%	43%
Below Promotion Zone	0%	N/A	None Eligible	0%	1%
*Officers Who Are Serving or Have Served In:					
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	0%	N/A	0%	0%	43%
Below Promotion Zone	0%	N/A	None Eligible	0%	1%

Promotion Rate Comparisons (FY 1987)					
Navy					
Promotion To: Commander	Competitive Category: Unrestricted Line				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	100%	N/A	96%	28%	63%
Below Promotion Zone	0%	N/A	2%	0%	1%
*Officers Who Are Serving or Have Served In:					
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	100%	N/A	96%	28%	63%
Below Promotion Zone	0%	N/A	2%	0%	1%

* Includes officers who have served since October 1, 1986.

Table 5

Title IV, Goldwater-Nichols DoD Reorganization Act of 1986

(Continued)

Promotion Rate Comparisons (FY 1987)					
Navy					
Promotion To: Commander	Competitive Category: Intelligence				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	None Eligible	N/A	100%	83%	64%
Below Promotion Zone	None Eligible	N/A	0%	0%	2%
	*Officers Who Are Serving or Have Served In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	None Eligible	N/A	100%	83%	64%
Below Promotion Zone	None Eligible	N/A	0%	0%	2%

Promotion Rate Comparisons (FY 1987)					
Navy					
Promotion To: Commander	Competitive Category: Cryptology				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	None Eligible	N/A	0%	63%	51%
Below Promotion Zone	None Eligible	N/A	0%	25%	7%
	*Officers Who Are Serving or Have Served In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	None Eligible	N/A	0%	63%	51%
Below Promotion Zone	None Eligible	N/A	0%	25%	7%

Promotion Rate Comparisons (FY 1987)					
Air Force					
Promotion To: Colonel	Competitive Category: Line				
	Officers Currently Serving In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	63%	N/A	58%	42%	44%
Below Promotion Zone	5%	N/A	2%	3%	4%
	*Officers Who Are Serving or Have Served In:				
	Joint Staff	Joint Specialty	Service Hqtrs.	Other Joint	Service Average
In Promotion Zone	63%	N/A	58%	42%	44%
Below Promotion Zone	6%	N/A	1%	3%	4%

* Includes officers who have served since October 1, 1986.

Table 5

Title IV, Goldwater-Nichols DoD Reorganization Act of 1986
(Continued)

Average Length of Tours of Duty In Joint Duty Assignments (FY 1987)*			
For Flag and General Officers Departing:			
	Joint Staff	Other Joint (Overseas)	Other Joint (Excl. Overseas)
Army	22	27	23
Navy	13**	19**	41**
USMC	N/A	26	25
USAF	29	26	25
DoD	22	26	25
For Other Officers Departing:			
	Joint Staff	Other Joint (Overseas)	Other Joint (Excl. Overseas)
Army	35	29	41
Navy	36	30	33
USMC	34	28	32
USAF	34	29	43
DoD	35	29	36
* Tour length in months.			
** Two Flag Officers in each category.			

Officer Distribution By Service (FY 1987)				
	Joint Staff*	Other Joint Duty*	Total Joint Duty*	Total DoD**
Army	291	2,718	3,009(37%)	35%
Navy	216	1,495	1,711(21%)	23%
USMC	58	382	440(5%)	7%
USAF	314	2,748	3,062(37%)	35%
DoD	879	7,343	8,222(100%)	100%
* Allocation of O-4 and higher grade positions on FY 1987 joint duty assignment list.				
** Share of all DoD officers in grade O-4 and above (regardless of joint or in-service assignment category).				

Appendix C

Table 1

**Department of Defense
Strategic Forces Highlights**

	FY 1980	FY 1984	FY 1986	FY 1987	FY 1988	FY 1989
Strategic Offense						
Land-Based ICBMs^a						
Titan	52	32	7	—	—	—
Minuteman	1,000	1,000	998	973	954	950
Peace Keeper	—	—	2	27	46	50
Strategic Bombers (PAA)^b						
B-52D	75	—	—	—	—	—
B-52G/H	241	241	241	234	234	234
B-1B	—	—	18	58	90	90
FB-111A ^c	56	56	56	52	48	48
Fleet Ballistic Launchers (SLBMs)^a						
Polaris	80	—	—	—	—	—
Poseidon (C-3 and C-4)	336	384	320	336	368	400
Trident	—	72	144	192	192	192
Strategic Defense Interceptors (PAA/Squadrons)^b						
Active	127/7	90/5	76/4	54/3	36/2	36/2
Air National Guard	165/10	162/10	198/1	195/11	216/12	216/12

^a Number on-line.

^b Primary Aircraft Authorized.

^c Begin Transfer to the TAF in the early 1990's as F-111G.

Table 2

Department of Defense
General Purpose Forces Highlights

	FY 1980	FY 1984	FY 1986	FY 1987	FY 1988	FY 1989
Land Forces						
Army Divisions:						
Active	16	16	18	18	18	18
Reserve	8	8	10	10	10	10
Marine Corps Divisions:						
Active	3	3	3	3	3	3
Reserve	1	1	1	1	1	1
Tactical Air Forces (PAA Squadrons) ^a						
Air Force Attack/Fighter						
Active	1,608/74	1,734/77	1,764/78	1,812/81	1,762//79	1,746/79
Reserve	758/36	852/43	876/43	900/44	894/43	876/43
Navy Attack/Fighter						
Active	696/60	616/63	758/65	752/67	758/67	792/70
Reserve	120/10	75/9	107/10	101/10	120/10	118/10
Marine Corps Attack/Fighter						
Active	329/25	256/24	333/25	331/25	334/25	341/25
Reserve	84/7	90/8	94/8	96/8	94/8	96/8
Naval Forces						
Strategic Forces Ships	48	41	45	43	42	42
Battle Forces Ships	384	425	437	445	439	443
Support Forces Ships	41	46	55	58	61	65
Reserve Forces Ships	6	12	18	22	28	30
Total Deployable Battle Forces	479	524	555	568	570	580
Other Reserve Forces Ships	44	24	21	21	20	18
Other Auxiliaries	8	9	7	5	5	5
Total Other Forces	52	33	28	26	25	23

^a PAA — Primary Aircraft Authorized

Table 3

**Department of Defense
Airlift and Sealift Forces Highlights**

	FY 1980	FY 1984	FY 1986	FY 1987	FY 1988	FY 1989
Intertheater Airlift (PAA)^a						
C-5A	70	70	66	66	66	66
C-5B	—	—	5	14	32	44
C-141	234	234	234	234	234	234
KC-10A	—	25	48	57	57	57
C-17	—	—	—	—	—	—
Intratheater Airlift (PAA)^a						
Air Force						
C-130	482	520	504	559	521	513
C-123	64	—	—	—	—	—
C-7A	48	—	—	—	—	—
Navy and Marine Corps						
Tactical Support	97	85	88	88	92	92
Sealift Ships, Active						
Tankers	21	21	24	20	20	20
Cargo	23	30	40	41	41	41
Reserve^b	26	106	122	135	144	151

^a PAA — Primary Aircraft Authorized.

^b Includes useful National Defense Reserve Fleet ships and the Ready Reserve Force.

Appendix D

GLOSSARY

AAW:	Antiair Warfare
AAWS:	Airborne Adverse Weather Weapons Systems
ABM:	Antiballistic Missile
AC:	Active Component
ACCS:	Army Command and Control System
ACM:	Advanced Cruise Missile
ACMR:	Air Combat Maneuvering Range
ACIP:	Aviation Career Incentive Pay
Ada:	DoD Computer Programming Language
ADATS:	Air Defense/Antitank System
ADCAP:	Advanced Capability (torpedo)
ADDS:	Army Data Distribution System
ADI:	Air Defense Initiative
ADP:	Automated Data Processing
AE:	Assault Echelon
AFV:	Armored Family of Vehicles
AGR:	Active Guard and Reserve
AID:	Agency for International Development
AIDS:	Acquired Immuno-Deficiency Syndrome
AIM:	Air-Intercept Missile
AIS:	Automated Information System
ALCM:	Air-Launched Cruise Missile
ALMV:	Air-Launched Miniature Vehicle
ALS:	Advanced Launch System
AMRAAM:	Advanced Medium-Range Air-to-Air Missile
ANG:	Air National Guard
ANZUS:	Australia-New Zealand-United States (Treaty)
AOCP:	Aviation Officer Continuation Pay
AOE:	Multipurpose Stores Ship
ASAT:	Antisatellite
ASDS:	Advanced SCM Delivery System
ASW:	Antisubmarine Warfare
ATA:	Advanced Tactical Aircraft
ATACMS:	Army Tactical Missile System
ATAS:	Air-to-Air Stinger
ATARS:	Advanced Tactical Air Reconnaissance System
ATB:	Advanced Technology Bomber
ATF:	Advanced Tactical Fighter
ATM:	Antitactical Missile
ATSD (IO):	Assistant to the Secretary of Defense (Intelligence Oversight)
AUTOVON:	Automatic Voice Network
AWACS:	Airborne Warning and Control System
BA:	Budget Authority
BAMC:	Brooke Army Medical Center
BFV:	Bradley Fighting Vehicle
BM/C ³ :	Battle Management/Command, Control, and Communications
BMEWS:	Ballistic Missile Early Warning System
BSTS:	Boost Surveillance and Tracking System

BTI: Balanced Technology Initiative

C³: Command, Control, and Communications

C³CM: Command, Control, and Communications Countermeasures

C³I: Command, Control, Communications, and Intelligence

CBR: Chemical, Biological, Radiological

CDI: Conventional Defense Improvements

CHAMPUS: Civilian Health and Medical Program of the Uniformed Services

CINC: Commander in Chief

COCOM: Coordinating Committee for Multilateral Export Controls

COMSEC: Communications Security

CONUS: Continental United States

CRAF: Civil Reserve Air Fleet

CS: Competitive Strategies

CSI: Competitive Strategies Initiative

CSOC: Consolidated Space Operations Center

CV: Aircraft Carrier

CVN: Aircraft Carrier, Nuclear Powered

CY: Calendar Year or Current Year

DAB: Defense Acquisition Board

DARE: Drug Abuse Resistance Education

DARPA: Defense Advanced Research Projects Agency

DCAA: Defense Contract Audit Agency

DCIMI: Defense Council on Integrity and Management Improvement

DDDR&E(T&E): Deputy Director, Defense Research, Engineering, Test, and Evaluation

DDG: Guided Missile Destroyer

DDN: Defense Data Network

DDS: Dry Deck Shelters

DDT&E: Director, Defense Test and Evaluation

DEPMEDS: Deployable Medical Systems

DEW: Directed-Energy Weapons, Distant Early Warning

DIA: Defense Intelligence Agency

DINET: Defense Industrial Network

DLA: Defense Logistics Agency

DMA: Defense Mapping Agency

DNA: Defense Nuclear Agency

DoD: Department of Defense

DoE: Department of Energy

DOT&E: Director, Operational Test and Evaluation

DPC: Defense Planning Committee

DRB: Defense Resources Board

DRG: Diagnosis Related Group

DSB: Defense Science Board

DSCS: Defense Satellite Communications System

DSN: Defense Switched Network

DST: Defense and Space Talks

DTSA: Defense Technology Security Administration

EC: Electronic Combat

ECI: Employment Cost Index

ECM: Electronic Countermeasures

ELF: Extremely Low Frequency
 ELV: Expendable Launch Vehicles
 EMP: Electromagnetic Pulse
 ENSCE: Enemy Situation Correlation Element
 ERIS: Exoatmospheric Reentry Vehicle Interceptor System
 ESF: Economic Support Fund
 ESM: Electronic Support Measures
 EW: Electronic Warfare

FAADS: Forward-Area Air Defense System
 FFG: Guided Missile Frigate
 FLOT: Forward Line of Troops
 FMS: Foreign Military Sales
 FMSCR: Foreign Military Sales Credit (Financing)
 FOFA: Follow-On Forces Attack
 FORSCOM: Forces Command
 FY: Fiscal Year
 FYDP: Five-Year Defense Program

GAO: General Accounting Office
 GLCM: Ground-Launched Cruise Missile
 GNP: Gross National Product
 GOCO: Government-Owned Contractor Operated
 GPS: Global Positioning System
 G-R-H: Gramm-Rudman-Hollings
 GS: General Schedule
 GSTS: Ground-Based Surveillance and Tracking System
 GWEN: Ground Wave Emergency Network

HARM: High-Speed Antiradiation Missile
 HCS: Helicopter Combat Support Special Squadron
 HEDI: High Endo-Atmospheric Defense
 HHG: Household Goods
 HIV: Human Immunodeficiency Virus
 HNS: Host Nation Support

ICBM: Intercontinental Ballistic Missile
 IFF: Identification Friend or Foe
 IG: Inspector General
 IHPTET: Integrated High Performance Turbine Engine Technology
 IIR: Imaging Infrared
 IMA: Individual Mobilization Augmentees
 IMET: International Military Education and Training
 IMC: Internal Management Control
 IMIP: Industrial Modernization Incentives Program
 INDCONS: Industrial Alert Conditions
 INF: Intermediate-Range Nuclear Forces
 INFOSEC: Information Security
 ING: Inactive National Guard
 IR: Infrared
 IRR: Individual Ready Reserve
 IRS: Internal Revenue Service
 IUSS: Integrated Undersea Surveillance System

JCS: Joint Chiefs of Staff
JMMC: Joint Military Medical Command
JSTARS: Joint Surveillance/Target Attack Radar System
JRMB: Joint Requirements and Management Board
JROC: Joint Requirements Oversight Council
JT&E: Joint Test and Evaluation
JTFME: Joint Task Force Middle East
JTIDS: Joint Tactical Information Distribution System

KEW: Kinetic Energy Weapons

LAMP: Land-Air Maritime Patrol
LANTIRN: Low-Altitude Navigation and Targeting Infrared System for Night

LCAC: Landing Craft, Air Cushion
LDCs: Lesser Developed Countries
LEDET: Law Enforcement Detachment
LF: Low Frequency
LHX: Light Helicopter Experimental
LIC: Low-Intensity Conflict
LOS-F-H Line-of-Sight Forward-Heavy
LOS-R Line-of-Sight Rear
LRAACA: Long-Range Air ASW Capability Aircraft
LRINF: Longer Range Intermediate-Range Nuclear Forces
LVT: Assault Amphibian Vehicle

MAB: Marine Amphibious Brigade
MAD: Mutual Assured Destruction
MAF: Marine Amphibious Force
MAP: Military Assistance Program
MAW: Marine Aircraft Wing
MIDEASTFOR: Middle East Force
MiG: Mikoyan-Gurevich (Soviet aircraft)
MILCON: Military Construction
Milstar: Military Strategic and Tactical Relay System
MIMIC: Microwave/Millimeter Wave Integrated Circuit
MIP: Model Installation Program, Management Improvement Plan
MIRV: Multiple Independently-Targetable Reentry Vehicle
MLRS: Multiple-Launch Rocket System
MMP: Master Mobilization Plan
MOA: Memorandum of Agreement
MOU: Memorandum of Understanding
MPS: Maritime Prepositioning Ship
MPTS: Manpower, Personnel, Training, and Safety
MRT: Miniature Receive Terminal
MRTFB: Major Range Test Facility Base
MSE: Mobile Subscriber Equipment
MYP: Multiyear Procurement
MWR: Morale, Welfare, and Recreation

NASP: National Aerospace Plane
NATO: North Atlantic Treaty Organization
Navstar: Navigation Satellite Timing and Ranging
NCA: National Command Authorities

NCMS: National Center for Manufacturing Sciences
NEACP: National Emergency Airborne Command Post
NFIP: National Foreign Intelligence Program
NLOS: Non-Line-of-Sight System
NMCC: National Military Command Center
NORAD: North American Aerospace Defense Command
NPG: Nuclear Planning Group
NRRCs: Nuclear Risk Reduction Centers
NSA: National Security Agency
NSDD: National Security Decision Directive
NSNF: Nonstrategic Nuclear Forces
NWS: North Warning System

OCONUS: Outside of the Continental United States
O&M: Operation and Maintenance
OJCS: Organization of the Joint Chiefs of Staff
OMB: Office of Management and Budget
OPTEMPO: Operating Tempo
OSD: Office of the Secretary of Defense
OT&E: Operational Test and Evaluation
OTH: Over-the-Horizon
OTH-B: Over-the-Horizon Backscatter (radar)

PAVE PAWS: Phased-Array Radars
PBA: Production Base Analyses
PCS: Permanent Change of Station
PECI: Productivity Enhancing Capital Investment
PGM: Precision Guided Munitions
PIF: Productivity Investment Fund
PIOB: President's Intelligence Oversight Board
PKO: Peacekeeping Operations
PLRS: Position, Location, and Reporting System
POL: Petroleum, Oil, and Lubricants
POMCUS: Prepositioning of Materiel Configured to Unit Sets
P&Q: Productivity and Quality Team
PPBS: Planning, Programming, and Budgeting System
PPI: Planned Product Improvements
PRC: Peoples Republic of China

R&D: Research and Development
RC: Reserve Component
RDT&E: Research, Development, Test, and Evaluation
REFORGER: Return of Forces to Germany
ROK: Republic of Korea
RO/RO: Roll-on/Roll-off
ROTHR: Relocatable Over-the-Horizon Radar
RPV: Remotely Piloted Vehicle
RRF: Ready Reserve Force
RV: Reentry Vehicles

S&T: Science and technology
SAC: Strategic Air Command
SADARM: Search and Destroy Armor

SALT: Strategic Arms Limitation Treaty, Strategic Arms Limitations Talks
SAM: Surface-to-Air-Missile, Sea Air Mariner
SASC: Senate Armed Services Committee
SATKA: Surveillance, Acquisition, Tracking, and Kill Assessment
SBI: Space-Based Interceptor
SDI: Strategic Defense Initiative
SDIO: Strategic Defense Initiative Organization
SDS: Strategic Defense System
SEAL: Sea-Air-Land
SEMATECH: Semiconductor Manufacturing Technology Institute
SFS: Surface Effect Fast Sealift
SHORAD C²: Short-Range Air Defense Command and Control
SICBM: Small ICBM
SINGARS: Single-Channel Ground and Airborne System
SINGARS-V: Single-Channel Ground and Airborne System, VHF
SLBM: Submarine-Launched Ballistic Missile
SLCM: Submarine-Launched Cruise Missile
SLEP: Service Life Extension Program
SLKT: Survivability, Lethality, and Key Technologies
SM: Standard Missile
SLOC: Sea Line of Communications
SNA: Soviet Naval Aviation
SNF: Short-Range Nuclear Forces
SOF: Special Operations Forces
SRAM: Short-Range Attack Missile
SSBN: Ballistic Missile Submarine, Nuclear-Powered
SSGN: Cruise Missile Attack Submarine, Nuclear-Powered
SSN: Attack Submarine, Nuclear-Powered
SSTC: Space Systems Test Capabilities
SSTS: Space-Based Surveillance and Tracking System
START: Strategic Arms Reduction Talks
Su: Sukhoy (aircraft)
SWA: Southwest Asia
SWCM: Special Warfare Craft, Medium
SWS: Special Warfare Systems

T&E: Test and Evaluation
TEC: Test and Evaluation Committee
TACS: Auxiliary Crane Ship
TASM: Tactical Air-to-Surface Missile
TEC: Test and Evaluation Committee
TFW: Tactical Fighter Wing
TGSM: Terminally Guided Submunitions
TIARA: Tactical Intelligence and Related Activities
TLAM: Tomahawk Land Attack Missile
TOA: Total Obligational Authority
TOW: Tube-Launched, Optically Tracked, Wire-Guided (antitank missile)
TRI-TAC: Joint Tactical Communications Program
TRSS: Tactical Remote Sensor System

UHF: Ultrahigh Frequency
URI: University Research Initiative

USCENTCOM: United States Central Command
 USCINCCENT: United States Commander in Chief, Central Command
 USCINCEUR: United States Commander in Chief, Europe
 USCINCLANT: United States Commander in Chief, Atlantic Command
 USCINCNORAD: United States Commander in Chief, North American
 Aerospace Defense Command
 USCINCPAC: United States Commander in Chief, Pacific Command
 USCINCSO: United States Commander in Chief, Southern Command
 USCINCSpace: United States Commander in Chief, Space
 USCINCSOC: United States Commander in Chief, Special Operations
 Command
 USCINCSOUTH: United States Commander in Chief, Southern Command
 USCINTRANS: United States Commander in Chief, Transportation Command
 USD (A): Under Secretary of Defense (Acquisition)
 USD (P) Under Secretary of Defense (Policy)
 USSOCOM: United States Special Operations Command
 USSR: Union of Soviet Socialist Republics
 USSOUTHCOM: United States Southern Command
 USTRANSCOM: United States Transportation Command

VA: Veterans Administration
 VE: Value Engineering
 VHA: Variable Housing Allowance
 VHF: Very High Frequency
 VHSIC: Very High Speed Integrated Circuit
 VLF: Very Low Frequency
 VLS: Vertical Launch System
 VLSI: Very Large Scale Integration
 V/STOL: Vertical/Short Take-Off and Landing

WARMAPS; Wartime Manpower Planning System
 WHNS: Wartime Host Nation Support
 WIMS: Worldwide Intratheater Mobility Study
 WIS: WWMCCS Information Systems
 WWMCCS: Worldwide Military Command and Control System
 WTVD: Western Theater of Military Operations (Soviet Term)